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BATTLEF VISUALIZATION

and Situational Awareness

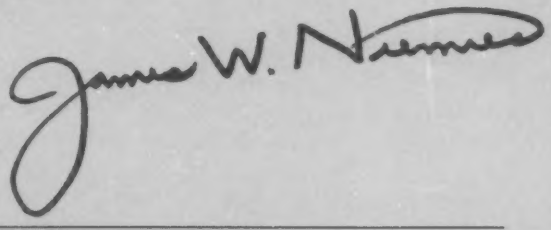
FROM THE EDITOR

Hello from sunny Fort Huachuca! I assumed the reins of ***Military Intelligence Professional Bulletin*** in August and I am extremely proud to serve as the editor of the journal for intelligence professionals. I see a lot of potential for ***MIPB*** and I fully recognize the magazine as a tremendous marketing tool for MI. During my tenure, I aim to—

- ☐ Maintain the outstanding quality of contributions from intelligence professionals in the active force.
- ☐ Improve all readers' access to ***MIPB***, including a streamlined administrative office, increased communications avenues, and an interactive website on the Internet that allows for our readers to browse our current issue, conduct research in our to-be-expanded online archives, and order ***MIPB*** right from your personal computer.
- ☐ Ensure that you get your copy on time, every time.

This issue has a decidedly tactical and heavy combat force bent—for good reason. Battlefield visualization and situational awareness are increasingly important tasks for intelligence officers at all levels of command and at all levels of war. We decided to focus on the 1st Cavalry Division at Fort Hood, Texas, to see how a heavy combat division continues to improve its ability to fully visualize itself, the enemy, and the terrain upon which it operates. From technological advancements in understanding the terrain and the weather, to tips on how best to track a battle, this issue of ***MIPB*** should shed some light on the chaotic mystery that is sometimes the battlespace of today.

I want to congratulate Captain "E.J." Rusk for his accomplishments as the editor of ***MIPB***, which included publishing our popular July-September 1997 issue that focused on the Task Force XXI Advanced Warfighting Experiment. He assumed command of Alpha Company, 326th MI Battalion. On behalf of the editorial staff, I wish "E.J." much success in his command.



Writer of the Quarter

MIPB is pleased to announce that, once again, Major John Frank Lady, III (U.S. Army, Retired), is our **Writer of the Quarter** (October-December 1997) for the article, "Directing Intelligence Operations IV: Intelligence Battle Command." Congratulations to MAJ Lady and thanks to all of our authors for their great articles, book reviews, and letters to the editor. Contributions like yours make ***MIPB*** the professional forum for military intelligence professionals.

How to Submit an Article

1. Select a relevant topic of interest to the military intelligence community.
2. Write an outline to organize your work. Put the bottom line up front and write clear, concise introduction and conclusion paragraphs.
3. Follow proper rules of grammar. Consult **DA Pamphlet 600-67** or William A. McIntosh's **Guide to Effective Writing**, if necessary.
4. Maintain the active voice as much as possible. Write "Congress cut the budget" rather than "the budget was cut by Congress." (See **DA Pamphlet 600-67**, **Effective Writing for Army Leaders**, paragraph 3-2b(1).)
5. Please send the article via E-mail to mcgoverne@huachuca-emh1.army.mil or mail it to Commander, USAIC&FH, ATTN: ATZS-TDL-B, Fort Huachuca, AZ 85613-6000. Please include with your article—
   - ☐ Pictures, graphics, and crests with adequate descriptions and photographer credits. (We can return photos if so requested.)
   - ☐ A computer diskette with the article in Microsoft Word, Word Perfect, or ASCII. Please do not use special document templates, and separate any graphics files from the text on the disk.
   - ☐ A release by your local security office stating that your article is unclassified, nonsensitive, and releasable to the public.
   - ☐ A short biography with the full names of all authors of the article. The biography should include each author's current duty position, other related assignments, civilian degrees, and advanced military education (CGSC, War College, SAMS, MSSI, SEIP, PGIP). (Tell us if we can print your telephone number and E-mail address with the biography.)
   - ☐ A cover letter with work, home, and E-mail addresses and telephone numbers, stating your wish to have the article published.
6. Remember, content is the most important part of your article. When in doubt, **send us your article**—we can work out the details.

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Chief of Staff

04087

VANTAGE POINT

by Major General Charles W. Thomas

Intelligence Support to the Combat Commander: Battlefield Visualization and Situational Awareness

This issue of the ***Military Intelligence Professional Bulletin*** focuses on battlefield visualization and situational awareness. Additionally, it highlights intelligence support to the 1st Cavalry Division. Increasingly, our branch relies on diverse and technical systems and soldiers trained to operate them. These systems and their operators are expected not only to collect and analyze information but also to move the right information to combat commanders in a time and manner which enhances operational success.

With powerful intelligence processors and collectors at our disposal, we have the ability to create a clear picture of the battlespace for combat leaders. This visualization capability allows commanders to know the battlefield and to make timely, informed decisions leading to victory and saving U.S. soldiers' lives.

As our Army gets leaner, we are moving more toward the concept of power projection. No matter where our Army travels, the need for intelligence is great. With the incredible power of emerging information systems, it is imperative that we give combat commanders the right intelligence and establish information dominance over any adversary.

The need for new, improved intelligence collectors and processors is growing. These systems must offer the intelligence professional a channel for receiving data and the means to pare it down to that which is necessary for supported commanders. For the past three years, including the Task Force XXI Advanced Warfighting Experiment (AWE) held in March, the Army has been testing the validity of this new technology and has been learning ways to make it work through better tactics, techniques, and procedures (TTP). This series of experiments will culminate in November with the Division AWE to be held at Fort Hood, Texas.

While this future building takes place, our Army continues to fulfill missions all over the world. The 1st Cavalry Division continues to deploy its soldiers to places like Kuwait where the need for intelligence systems and professionals is critical to mission success. As you read these articles, note the use of proven intelligence systems like the TROJAN Special Purpose Integrated Remote Intelligence Terminal (TROJAN SPIRIT) and the All-Source Analysis System (ASAS), the flagship system of MI.

As we continue to shape the Army of the 21st century, MI's structure will continue to change. Our divisional MI battalions are emerging with a new and better-balanced Modified Table of Organization and Equipment to support the combat commander better than before. Some of our collection and processing systems—like the Ground-Based Common Sensor (GBCS), unmanned aerial vehicle (UAV), Joint Surveillance Target Attack Radar System (Joint STARS), and especially ASAS—continue to mature and have proven to be extremely effective in exercises and deployments around the world.

MI is, and will continue to be, a combat multiplier on future battlefields. Although we are always looking for new and better technology, and although we continue to improve the powerful systems we currently have, we will always require quality soldiers to operate these systems. Properly trained intelligence professionals who can collect information and produce intelligence for combat commanders will be the difference on the battlefield of the 21st century.

Read this issue carefully and see what we are doing in the tactical intelligence community. Our future continues to be exciting and diverse.

ALWAYS OUT FRONT!

CSM FORUM

by Sergeant Major Randolph Hollingsworth

My guest writer for this issue of ***MIPB*** is Sergeant Major Lealand L. LaFluer, SGM of the U.S. Army Europe (USAREUR) and 7th Army Office of the Deputy Chief of Staff for Intelligence (DCSINT). He reminds us that caring for our soldiers involves more than ensuring that they are fed, paid, and receive

their mail. Caring for them includes training, operations, maintaining, discipline, and having fun. These are all important in developing and nurturing well-rounded soldiers.

USAREUR and 7th Army DCSINT Sergeant Major's Philosophy

Regard your soldiers as your children, and they will follow you into the deepest valleys; look on them as your own beloved sons, and they will stand by you even unto death. If, however, you are indulgent, but unable to make your authority felt, kindhearted but unable to enforce your commands; and incapable, moreover, of quelling disorder, then your soldiers must be likened to spoiled children; they are useless for any practical purpose.

—Sun Tzu

The mission and caring for soldiers go together; neither is more important than the other. Soldier-caring is more than three meals a day and a cot, payday, and mail call. It includes training your soldiers to survive and complete their missions in battle. It means demanding and checking to ensure that they are abstaining from drugs and alcohol abuse; ensuring they are working their military occupational specialties (MOSs); and receiving continual training to improve their skills in their MOSs and in leadership skills. You must ensure that they get the opportunity to be promoted and that they do not have to work for incompetent noncommissioned officers (NCOs) or officers.

Get feedback from them affirming that they fully understand their jobs and their places in the units' hierarchies. Let them know that they are appreciated for their service to the country, the Army, and their units. We must develop an atmosphere where soldiers enjoy going to work and feel positive about their units and their jobs. Counsel them so that they understand their rights and benefits and ensure they receive all that is due them regarding rewards, recognition, and discipline, as the situation dictates.

The term "soldier" refers to officers, NCOs, and junior enlisted; they are not troops, personnel, assets, or "bodies." The U.S. soldier is an adult who made the conscious decision to contract with the Army to serve for pay and benefits. These soldiers are volunteers under a binding oath. The Army and their units have a right to expect honorable and faithful service 24 hours a day for their entire term of service—nothing less. Every soldier has the right to expect caring competent leaders—leaders dedicated to their welfare while they assist in accomplishing the unit's mission.

You must earn respect, trust, confidence, and loyalty. Do not expect these to be issued with your rank. A soldier's loyalty goes first to his country, the Army, his command, and finally to his supervisor. You gain your soldiers' confidence, trust, and respect by the decisions you make and the way you enforce them.

I once saw a young specialist in my company receive an Article 15 for fighting. That evening a soldier from another unit visited our compound and called our commander a name. Our young soldier grabbed the outsider and knocked him to the ground, saying, "No one calls my commander a $*#&! and gets away with it." The next morning he reported to the commander to receive another Article 15. Asked to explain his actions, he told the commander, "Sir, this is my company and you are my commander; nobody shows disrespect to either. Not while I am around."

When the commander asked the young man if he should get a lighter punishment for the incident, he said, "No, Sir! I understood what the punishment would be for my actions before I took them. You are my commander and you have already set the standards in the company. I do not expect, nor want, you to change those for my benefit."

Training

Train to standards; training to anything less will only set up your soldiers for failure. Bending or compromising the standards for anyone makes you a failure as a leader. You can and should train to surpass military standards, but never train to a lower standard. When training, know your audience and train to the lowest level of those present. This way, you teach everyone to the same standards.

A test of skill will detect your soldiers' knowledge before and after your training. Use this test to determine where your section, team, or unit stands on each task. A lack of testing will become apparent when you can least afford the negative results. **A good soldier team can cover each others' weaknesses, but only if the weaknesses have been identified.** Testing also gives the unit a means to assemble teams with the knowledge that the balanced skills will accomplish the mission.

You must train at the lowest level to develop both strong teams and esprit de corps. For the most part, soldiers will work and fight for the smallest element with which they are associated: the team, section, etc. Leaders must use one-on-one, hands-on training as it is the most effective training method for small sections. The leader must also know and use soldier assets to help train new team members. You will see the pride gleam in the face of a specialist when you tell him to take a new soldier and bring him up to speed with the unit.

When deploying elements of your unit, deploy personnel with their assigned teams. Avoid deploying make-shift teams of individuals who have not worked together. Deploying teams that have trained together will give you better results because your teams have developed team proficiency as a result of continually working together.

Train yourself and your soldiers thoroughly. Commanders want to know that the soldiers in their command know their jobs and the unit's mission. That means that soldiers can greet and brief visitors in their sections, no matter what the visitor's rank. This indicates to the higher leaders that the leadership of this section has excelled in all areas, including training and maintaining communications and standards. This also infers that soldiers care about themselves and what they are doing. Senior leadership should not have to defend your area from visitors. We want to welcome visitors because we have the best soldiers in the Army working for us!

Do not confuse the NCO's use of corrective training with discipline—it is training. Conduct this training with no parameters, only a goal. The goal is to retrain deficient soldiers in the areas in which they are deficient. The duration of this additional training depends on the comprehension level of the soldier and his dedication to the training. Soldiers who fail to attain the goals of the retraining should be removed from the military for their inability to conform to military standards.

Operations

Good leaders have trained units. They know that their soldiers enjoy demonstrating their hard-gained knowledge. The best impression a high-ranking officer receives of a subordinate leader is the impression demonstrated by the soldiers trained by the junior leader. Let the real experts you trained do their jobs; good leaders know when to step back and let the unit run itself. If you are afraid that your unit cannot complete its mission without you, you have a shortfall in training.

Plan ahead to minimize disruptions to soldiers so you achieve maximum benefits during working and training hours. However, short-notice requirements are a reality; if such a requirement appears, plan its execution first, before reacting. Once the mission is underway and progressing satisfactorily, then address the issue of the short notice.

Delegate regularly and demand honest responses to the progress of your projects. Delegation does not absolve one from the problem-solving process. It means a logical distribution of tasks within the section, team, or unit, and holding the tasked soldier accountable. Delegation develops teamwork and helps to identify, evaluate, and train subordinates. A good example is the old power-down concept: let the lowest-ranking soldier who can do the job do it. The opposite of this is the leader that has no time because he attempts to do all the work he needs to accomplish. The problem is that he does not trust his soldiers to get the job done to meet his and the Army's standards. To avoid this, train your soldiers to meet all standards; then delegate to your soldiers the jobs for which they trained.

Meetings with objectives are valuable if there is an agenda in place. If the meeting calls for a decision, it is the leader's job to make the decision. Once the commander makes a decision, all members of the team, section, or command must comply with both the letter and the spirit of the decision. Lack of support for our leaders means failure for everyone involved.

Staffs make their livings from information servicing. Their thirst for information is boundless. Experience tells me that the path of least resistance is simply to answer tasks, mail, and questions when they arrive and be done with it. He who hesitates is backlogged.

Do not screw up safety! Allow for the latitude to make mistakes; expect them, but keep soldiers and equipment safe. Safety errors have caused death and serious injury; these reflect a lack of caring by leaders. When in doubt, back off and wait for the professionals in that area to arrive. It is far better to waste time than lives.

Maintaining

The backbone of any group of soldiers is the self-motivated soldiers. They work hard at their jobs and produce worthwhile results without being coerced into doing so. These soldiers carry their groups through the exercises, inspections, daily work, and the battle. They drive on no matter what, and other, less-motivated soldiers follow them and think they are indispensable. History has proven time and again that no one is indispensable. Hopefully, you will have these motivated soldiers throughout your unit. You must reward, encourage, and protect these soldiers while developing them for positions of greater responsibility.

Do not keep these good soldiers down. Often they do not get the benefits of schools or good temporary duty assignments, mainly because people have the misconception that they are truly indispensable. Leaders must guard against this and turn the good soldiers loose for the long-term good of the Army.

Maintenance of all equipment in your charge is an absolute necessity. As a leader, you are held accountable for the proper functioning of your equipment. This can mean the difference between a successful or failed mission. Perform maintenance daily or on a regular schedule, by the numbers, and inspect frequently. How well a unit maintains its soldiers, their dependents, and its equipment shows how caring and dedicated its leadership is.

Discipline

Discipline addresses those areas where soldiers who disobey will suffer the consequences available to the Army and its leaders to inflict. Some of these areas include deliberate lying, not telling the whole truth, covering up, drug use, alcohol abuse, family member abuse, and deliberate or foolhardy ignoring of safety procedures. These infractions must be

(Continued on page 55)

LETTERS

To the Editor:

I have seen the future of warfare....the Army's ability to use information to dominate future battles will give the United States a new key to victory, I believe, for years, if not for generations to come.

—Secretary of the Army, William Cohen, after his NTC visit to witness the TF XXI AWE

The Task Force XXI (TF XXI) Advanced Warfighting Experiment (AWE) was a success. Prior to the 4th Infantry Division (Mechanized) 1st Brigade Combat Team's (1BCT) deployment to the National Training Center (NTC) in March 1997, some believed that the AWE was a preordained "success." They believed the Army was just going through the motions to validate this success—nothing could be further from the truth.

The fact that an entire Army brigade was digitized with cutting edge information technologies operated by quality soldiers ***and*** conducted coherent tactical combat operations digitally was a substantial accomplishment. This event provided the Army with an azimuth to dramatically redirect the way we think about and employ technology on the battlefield and how we leverage it to achieve information dominance. Technology was not the only venue, however. The TF XXI AWE addressed the proper mix of forces, new doctrine, fine-tuning our modernization strategy and leader development programs, and how we train soldiers, battle staffs and entire units of redesigned and digitized forces.

The 1BCT deployed with nearly 1000 vehicles. There were 73 separate technology initiatives consisting of more than 5000 new items: Appliqué, Precision Lightweight Global Positioning System, Enhanced Position Location Reporting System, Single Channel Ground and Airborne Radio System, Battle Command Information System, and 1386 others. At the time of the AWE, the 1BCT was indisputably the most digitized ground combat force in the United States.

Many "rear echelon observers" have distilled certain truths or beliefs about what really happened and what these findings mean to information warriors. Even with final reports, I suspect varying degrees of acceptance of certain truths will remain. Here are a few distilled results and thoughts.

Challenges. The 1BCT's challenges were equally split between training, technology and "process re-engineering" (tactics, techniques and procedures (TTP)). Technology without training and solid TTP is a waste. My guess is that a well-trained, nondigitized unit with sound standard operating procedures (SOPs) will always be more lethal than an ill-trained digitized unit.

Dominance. What is "information dominance"? Everyone in the AWE wanted it. Do we know what it feels like, and if we achieve it, how will we know? *"We have unmanned aerial vehicles and Joint Surveillance Target Attack Radar Systems airborne, therefore we have information dominance"*-type statements can be incorrect and dangerous. Perhaps the enemy has equivalent assets flying, which equates to information parity (at least for aerial surveillance). Information dominance is more clearly evident with achievements like *"we are out-thinking the enemy, hitting him before he moves; we know his intentions and we are moving before he can locate and target us."* ***Dominance is relative.***

Close Combat. Close combat operations are emotional events. Emotions cannot be digitized and displayed on a computer screen, nor can computers react as fast as a soldier's voice. "Situational awareness" to a tank commander in close combat is what his eyes and intuition tell him. I wonder if the FM voice net will ever become obsolete? Digitization cannot substitute for basic soldiering skills, emotions, or intuition. **Digitization is a tool; the "toolbox" remains the soldier.**

Training. All soldiers must learn the technology. In most units, only lieutenants, E-6s, and below operated the systems. Captains and higher ranking individuals were reluctant to run the systems. One (very) senior officer stated, *"We need to fire all officers above O-2 because they refused to learn the technology."* When battle staff officers did not believe what their digital "common relevant picture" was telling them, they bypassed and ignored it. One senior observer stated that at every after action review, when the observer/controllers compared the pictures of reality from their instrumentation to the Appliqué-Maneuver Control System-ASAS picture, there was ***virtually no difference!*** He said, *"I don't know what it will take to get these folks to trust the machines."*

This lack of "trust" probably stems from a lack of understanding. Soldiers trust and depend on what they know best. Experience is largely non-transferable, but training **is** transferable.

The bottom line is that information warriors must be tactically proficient first. Any "worship" of technology must be consciously tempered. As a means to an end, technology can provide a significant combat multiplier to turn information dominance into mission success.

William T. Coffey, Jr.
Colorado Springs, Colorado

FIRST TEAM Intelligence Support to the 1st Cavalry Division

by Major General Leon J. LaPorte and Lieutenant Colonel Gus E. Greene, Sr.

As a result of force modernization efforts and extensive training opportunities, the 1st Cavalry Division has become the most lethal, deployable, heavy combat force in the world. It is critical to our success for our commanders to visualize the battlespace in which we will fight. Seeing the enemy and the terrain while being able to see ourselves sets the conditions for applying overwhelming combat power against enemy weaknesses. Real-world deployments, National Training Center rotations, and training exercises have provided the intelligence team with many opportunities to accomplish this difficult and complex mission. And, on all occasions, they have set new standards for intelligence gathering, analysis, and dissemination.

Real-World Deployments

Last September, the "FIRST TEAM" deployed the 3d Brigade to Kuwait to demonstrate the United States' resolve to counter Iraqi aggression. Because the G2 section previously extended the Analysis and Control Element's (ACE) collateral communications network into the Division Emergency Operations Center (DEOC), they were able to provide twice-daily briefings on the situation in Iraq and Kuwait. Analysts provided softcopy updates and All-Source Analysis System (ASAS) briefing slides detailing information on locations and intent over the network into the DEOC. Supported by national-level imagery, this capability gave the Brigade Commander complete situational awareness and created tremendous confidence in our intelligence collection efforts. As a result, we fully believe that the G2 and the ACE can accomplish their wartime mission.

This no-notice deployment marked the first time the division had executed a real-world, split-based operation. The ACE supported the Brigade with a Deployable Intelligence Support Element (DISE) consisting of four personnel and a TROJAN Special Purpose Integrated Remote Intelligence Terminal (SPIRIT). This team became a vital link to the ACE. The ACE provided daily intelligence updates from sanctuary (the Sensitive Compartmented Information Facility (SCIF)) and made them available to the Brigade as it trained in the Kuwaiti desert, a mere 8,000 miles away. I was also able to talk with the Brigade Commander from the SCIF using video teleconferencing. Each of these capabilities reinforced our confidence in the intelligence team's ability to support the division anywhere in the world.

Training and New Initiatives

During the numerous training exercises over the past year, the intelligence team has provided unprecedented battlefield visualization. Our recently completed Battle Command Training Program (BCTP) Warfighter Exercise offered a glimpse of their latest initiatives. During the deliberate planning process, the G2 Plans team instituted the intelligence wargame as a formal part of mission analysis. All battlefield operating system (BOS) representatives contributed their expertise to enemy course of action (COA) development. By wargaming against a G2-developed friendly plan, the detail in the event template significantly improved. The G2 then briefed the enemy event template as a part of the formal mission analysis briefing. The briefing gave us the ability to see the enemy commander's key decisions and his potential weaknesses. It provided a basis for guidance to the remaining planning staff on developing friendly COAs.

Critical to the intelligence wargame were the topographic engineering section and the Staff Weather Officer (SWO). Topographic engineers brought the terrain to life with the Multispectral Imagery Processor (MSIP). Using this computer to rapidly build digital terrain products eliminated countless hours of manual labor with map pens and acetate. For example, the operators manipulated the digital terrain data on the computer to create an artillery slope analysis, highlighting the areas where the slope of the terrain was too great to establish enemy artillery firing positions. Consequently, we could rapidly narrow the focus of our collection efforts and maximize our limited collection capability.

U.S. Army photos

1st Cavalry Division Bradleys and troops in Kuwait.

By providing detailed analysis of weather effects on our weapons systems, the SWO also assisted in battlefield visualization. His matrices identified potential enemy weaknesses to exploit and possible hazards to minimize for our forces.

For each exercise, I reminded the staff of three simple rules. They are----

- ☐ Rule #1: Focus on the enemy.
- ☐ Rule #2: Fight the enemy and not the plan.
- ☐ Rule #3: When in doubt, follow Rule #1.

Current Army doctrine dictates that priority intelligence requirements (PIR) should focus on deci-

sions to be made during the fight. I have modified this to focus on the rules above. More specifically, I have **tied my PIR to key decisions and events for the enemy commander**. Consequently, I can counter his options before he can execute. Recent innovations in virtual simulation have significantly improved the G2 and ACE's abilities to present the enemy, answer PIR, and conduct targeting. Joint Surveillance and Target Attack Radar System (Joint STARS) and unmanned aerial vehicle (UAV) virtual simulations now offer close replications of real capabilities.

During our recent BCTP Warfighter Exercise, these simulations revolutionized the way we operated. Joint STARS simulation, coupled with other collectors, became a wide-area search tool that tipped off the narrower collection capability of the UAV simulation. As a result, we confirmed enemy locations to direct precision deep attacks and proactive counterfire. These simulations not only improved my situational awareness but also allowed the G2 and the ACE to train using wartime tactics, techniques, and procedures.

Like the rest of the Army, the Division is awaiting the fielding of the ASAS remote workstations. In the interim, the G2 developed a "homepage" to support the subordinate commanders' battlefield visualization. Our critical time-sensitive information was still transmitted over the radio; however, the FIRST TEAM Intelligence Homepage afforded commanders access to a significant amount of intelligence information. Maintained on a computer in the SCIF, the homepage included the base order, order of battle, current intelligence summaries, current battle damage assessments, current division and subordinate PIR, current collection plan, and more. Additionally, the homepage was a conduit to send and receive responses to information requests. Just prior to the BCTP Warfighter Exercise, we upgraded the homepage by adding the ability to query the current ASAS database, and provide a printout of the current enemy location. Subordinate S2s could now assist commanders in battlefield visualization.

Partnership for Peace Exercise

In May of this year, the 1st Cavalry Division participated in a Partnership For Peace Exercise at the Bergen training area in Germany. While not a routine division mission, the exercise provided an excellent opportunity to learn and share experiences with 24 different nations in a peacekeeping operation. For the G2, the focus shifted from tracking enemy forces and providing targets for destruction to confirming compliance with the peace agreement. Visualization of the operational area and identifying unauthorized military equipment and forces in the selected buffer zone was vital to the effort.

MG LaPorte holds a press conference to anounce decisions made by the "warring factions" during the Partnership for Peace exercises. He is flanked by unknown officers who played the role of senior military officials of the warring factions.

For example, during the course of the exercise, I met periodically with the leadership of the "former warring factions." The meetings, called Joint Military Commissions (JMCs), were used to enforce compliance between the former warring parties. During the JMC, the G2 simulated the use of UAVs and other sensors to provide near-real-time imagery and information confirming violations of the agreement. Throughout the exercise, the intelligence team demonstrated its flexibility by providing timely and accurate "military information" that facilitated our great success.

Conclusion

As Sun Tzu has said—

Know the enemy, know yourself; your victory will never be endangered. Know the ground, know the weather; your victory will then be total.

The 1st Cavalry Division intelligence team demonstrated it can set the conditions for "total" victory. The division's success in real-world deployments, training exercises and, most recently, the Partnership for Peace exercise is in no small measure directly attributable to our ability to make battlefield visualization a reality.

Major General LaPorte's follow-on assignment is Assistant to the Army Deputy Chief of Staff for Operations. He commanded the 1st Cavalry Division for two years through July 1997. His previous assignments include Commander of the National Training Center and Fort Irwin; Commander, 3d Brigade (Greywolf), 1st Cavalry Division; and, during Operations DESERT SHIELD and DESERT STORM, Chief of Staff for the 1st Cavalry Divison. MG LaPorte has a bachelors degree from the University of Rhode Island and a master of science degree in Administration from the University of California at Irvine. Readers can contact the author at E-mail laporlj@hqda.army.mil.

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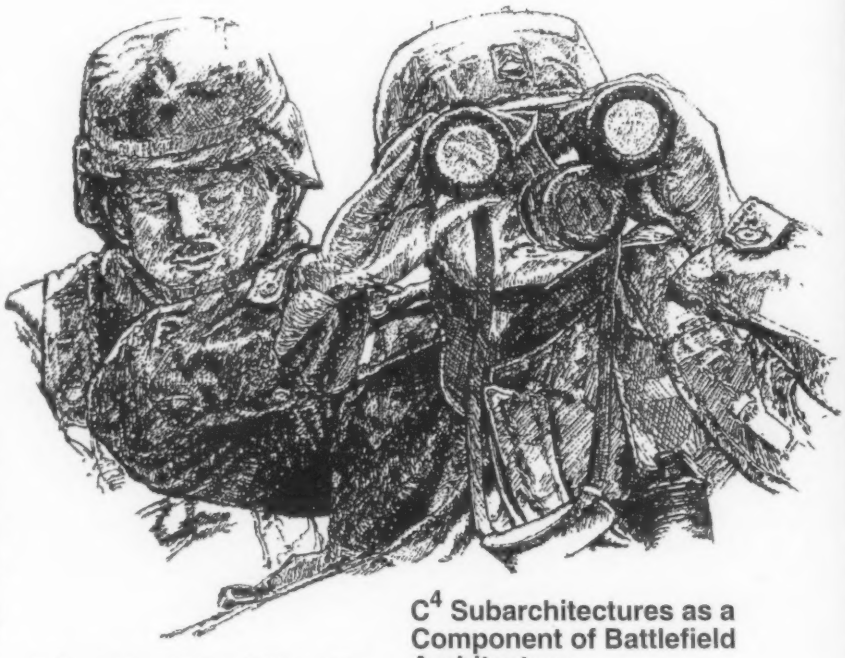
Building Situational Awareness In Force XXI

by Colonel Barbara G. Fast

The end of the Cold War, combined with the advent of the technological revolution, is presenting the Army and the other branches of the military with an unprecedented opportunity and need to redefine military operations for the 21st century. The pace of operations is busier than ever, yet the Services face downsizing and dramatic budget cuts. Each Service is addressing its warfighting business, looking for ways to operate with a smaller yet more lethal force. Accessing information and leveraging technology are central to a new way of warfighting. Information and technology, when combined with changes in doctrine and organization, should be able to create conditions for decisive victory. Each Service has a program to catapult itself into the next century:

- ☐ The Navy's program is "Forward...From the Sea."
- ☐ The Air Force's program is "Global Reach, Global Power."
- ☐ The Marine Corps' program is "Operational Maneuver...From the Sea."
- ☐ The Army's program is "Force XXI."

General Gordon R. Sullivan (USA, Retired) described Force XXI as a campaign plan—an evolutionary *"journey for the Army as an institution."*[1] Force XXI is about integration—taking existing technology and systems, leveraging new technology, and digitizing the entire process to create an interactive, interoperable force on the battlefield. There are three axes to the Force XXI campaign plan: the redesign of Army operational forces, the reinvention of the Institutional Army, and the development and acquisition of information-age technologies.[2]



This article will focus on the third axis: information-age technologies. My emphasis will be on command, control, communications, computers, intelligence, surveillance, and reconnaissance (C^4ISR) programs; their battlefield architecture; and the effectiveness of systems, technology, and information to enhance decisionmaking. Since decisionmaking is facilitated by the achievement of situational awareness, this article will examine, from an intelligence perspective, whether developing processes for information collection, processing, and dissemination will be adequate to meet the Force XXI goal of giving commanders the level of situational awareness necessary for good, informed decisionmaking.

C^4 Subarchitectures as a Component of Battlefield Architecture

In contrast to attitudes that prevailed during Operations DESERT SHIELD and DESERT STORM, today many senior Army leaders now cite Intelligence as a leader in the leveraging of technology, digitization, and support to the combat commander. But are the intelligence processes, combined with the other battlefield functional area (BFA) processes, evolving quickly enough to support better situational awareness and decisionmaking?

The battlefield architecture consists of all the BFAs, their systems, and their processes. C^4 subarchitectures are a subset of this overall architecture and have three basic components. The first comprises information sources, such as sensors that collect data, and operational units that provide input. The next component in-

cludes the collection management, processing, analysis, and dissemination facilities. In the intelligence area, this translates to the Analysis and Control Element (ACE) and Joint Intelligence Center (JIC) at the tactical and operational levels, respectively. Commanders, decisionmakers, and other users are the third and final component.[3] I will focus on the second component, since intelligence contributes the most to the overall battlefield architecture in this component.

Collection Management

To achieve situational awareness, we must know where the enemy is and is not. The fielding of the intelligence family of systems is the key to accomplishing this difficult task. Most collection system improvements are in the development or prototype stage and include such systems as Joint Surveillance Target Attack Radar System (Joint STARS), unmanned aerial vehicles (UAVs), Ground-Based Common Sensor, Advanced QUICKFIX, Guardrail Common Sensor, Enhanced TRACKWOLF, and the Airborne Reconnaissance Low. When employed as a seamless collection entity, these systems will comb the battlefield for information as never before.

However, one should not be fooled into believing that these systems alone will be sufficient. To meet Force XXI goals, all combat, combat support, and combat service support systems and units must be digitally integrated. This means that intelligence and nonintelligence assets must be designed (or redesigned) to be interoperable. Special purpose-built intelligence systems must be designed and fielded quickly to augment or, in some cases, replace traditional intelligence collectors.

There are many platforms on the battlefield whose primary mission is something other than intelligence collection (e.g., the Apache Longbow). However, each of these platforms is also ideally suited to provide information. The problem is that this secondary role is either being recognized only as an afterthought or is completely overlooked. These information resources must be identified and incorporated into the information web, preferably while still in the acquisition stage. Other information sources, such as civil affairs units, have access too and should be part of a collection plan. As a whole, an "intelligence preparation of the collection environment" must be done. This will determine optimal collection strategy, needs, and synchronization of assets.

Additional technology should be employed in collection platforms. On-board processing should be increased to the maximum extent feasible. Also, collection systems should be upgraded with a capability to detect message format errors before data is sent to processing centers. Compatible datalinks to central processing systems should be used to decrease the complexity of communications. There are other promising technologies just over the horizon, including infrared signature development, acoustic sensor arrays, multi-domain smart sensors, robotics, and voice identification, that also should be integrated as their maturity and resourcing permits.

Nontraditional information sources, along with intelligence platforms, must be incorporated into collection plans to maximize our effort to locate the enemy. However, the tools for collection and resource management of these sources are not yet available. The All-Source Analysis System (ASAS) and various Tactical Exploitation of National Capabilities Program (TENCAP) systems contain different collection management software. There is not a singular, seamless collection management program that takes us from the tactical to the national level. We need an agreement to integrate the Joint Collection Management Tools (JCMT) software or some like functionality in all systems. This will permit multi-echelon tasking and requirements tracking for the first time. The ability to task, track, cross-cue, and manage collection assets is a companion piece to this requirement. The U.S. Army Intelligence Center and Fort Huachuca (USAIC&FH) is building this software into an ASAS-Remote Workstation (ASAS-RWS) as part of the Task Force XXI advanced warfighting experiment.

While we are doing it better than ever before, we still cannot collect every shred of information about the enemy. There are a finite number of collection systems and the ability to cover the battlefield is highly dependent on the mission, enemy, terrain, troops, and time available (METT-T). Therefore, thorough intelligence preparation of the battlefield, focused priority intelligence requirements, and well-thought-out reconnaissance and surveillance plans are more important than ever. This limitation underscores the requirement for an automated, dynamic intelligence synchronization matrix. This matrix should also agree with the mission analysis wargaming results. USAIC&FH and the XVIII Airborne Corps are working together to establish a viable automated synchronization matrix.

Processing

Major processing centers are found at division level and above. ASAS is the backbone of the division- and corps-level processing systems and has been used successfully in both exercises and real-world operations. The ability of ASAS to correlate large amounts of data from multiple sensors to display a coherent picture of the battlefield places it squarely in the Force XXI arena. ASAS was cited by Battle Command Training Program (BCTP) senior observer/controllers as an integral part of the success achieved during division- and corps-level campaigns that were conducted as part of a joint exercise, Unified Endeavor, in April 1995.[4] It was evident that the pic-

ture available to the corps and divisions with ASAS, was more accurate, timely, and facilitated decisionmaking, compared to that of the Joint Task Force Headquarters (without ASAS). As some of the first equipment in country, ASAS also was employed with some success in Haiti and is now employed in our operations in Bosnia. At the theater level, ASAS-Extended provides commands with an added capability to process all-source intelligence and to interoperate with tactical ACEs.

The concept of split-based operations permits the phasing of intelligence capabilities into a theater and continuous on-the-move operations in theater. A small cell deploys early with or even ahead of the first combat units to begin processing information and sending data back to a sanctuary or home station. This Deployable Intelligence Support Element (DISE) is tailored to the mission, but usually consists of a TROJAN SPIRIT, an ASAS-RWS, a workstation with Joint Deployable Intelligence Support System (JDISS) software, and often a TENCAP system like the Mobile Integrated Tactical Terminal (MITT) to provide downlinked near-real-time data and imagery. This capability resolves problems faced during DESERT STORM and has been validated in Haiti, Bosnia, and at numerous exercises. It is part of the tactical tailoring that is occurring in both collection and processing.

Until now, most sensor information flowed directly to major processing centers only at division-level and above. The MI community fielded the first two Common Ground Stations (CGSs) in 1997. The CGS will be fielded at the brigade level, providing the brigade's first-ever capability to independently receive sensor data, imagery, and video, and to develop a time-sensitive electronic picture of the battlefield (especially when combined with an ASAS-RWS). The brigade intelligence challenge will be to determine how information is merged, the level of analysis done at the CGS, which information needs to go directly to decisionmakers or shooters, and how to get all of it into an ASAS-RWS for analysis.

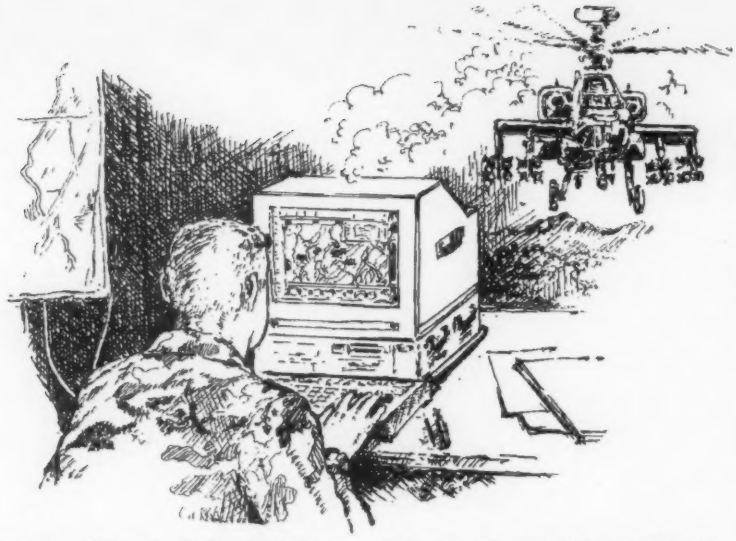
CI/HUMINT Information. Shortfalls remain in our ability to task and process valuable battlefield information, especially counterintelligence (CI) and human intelligence (HUMINT). Not using these assets extensively in exercises such as a BCTP Warfighter Exercise or a National Training Center rotation may have contributed to a lack of understanding, until recently, of how to task them in real-world contingencies. Rotations at the Joint Readiness Training Center, with its low-intensity focus, and recent real-world activities in peace operations—which are CI- and HUMINT-heavy—have shown the value of these disciplines. A Rand study found that CI and HUMINT are the *"highest value systems for noncombat operations for long-term situations characterized by infrequent operations by small units or groups."*[5] Former Secretary of Defense William J. Perry cited the demands on CI as increasingly complex throughout the spectrum of conflict and called for a Department of Defense database and automated information network.[6]

In low-intensity conflicts or peace operations, important information which establishes a pattern, trend, or provides other information (such as morale or intentions) is contained in text. In Haiti, incident tracking became a critical and nontraditional task—information concerning civil disturbances and criminal activity was important to follow.[7] The Theater Rapid Response Intelligence Package (TRRIP) database provides a single-source preprocessing tool to CI/HUMINT operators and analysts. TRRIP has been used successfully by the 519th MI Battalion in Haiti and by the 66th MI Group, corps, and divisions in Bosnia. TRRIP and other sensors feed the Blackbird database. This database permits retrieval from text files and linkage of events, personalities, and organizations. In the future, these systems will be replaced by the CI/HUMINT Automated Tools Set (CHATS).

CI/HUMINT information must also reach the all-source database. Because ASAS accepts only formatted reports, important free-text information cannot be merged seamlessly into the correlated database. A "workaround" is to link a text field to the data in the correlated database so that when an operator clicks on a symbol, the amplifying textual information is retrieved and displayed. Such required improvements abound for ASAS and hopefully will be fielded during the next major software upgrade.[8] This tool would certainly be useful for enhancing a commander's situational awareness. Web browser technology also holds great promise for working with text files.

Open-Source Intelligence. The problems of integrating our special operations, long-range surveillance, and open-source intelligence (OSINT) reporting are similar to those in integrating CI/HUMINT information. The information superhighway and automation in general have created an explosion of OSINT. There are two challenges in using this information. The first is the time required to convert large volumes of data into usable intelligence. For example, 82d Airborne Division intelligence analysts in Haiti found a wealth of information on the Internet, from the names of local officials to the locations of warehouses, but it was time-consuming to convert that data into a textual format.

The second challenge is to find the genuine pearls in this huge sea of information.[9] The National Ground Intelligence Center has developed a software package called Pathfinder (see the ***MIPB*** January-March 1996 issue, page 33). Pathfinder can sort, com-



pare, retrieve, and visualize thousands of documents at a time. The software loads the electronic media into a database, provides analyst tools, and through link analysis permits users to draw conclusions. Analysts compared merged 1990 and 1994 Iraqi deployment databases and found that the two sets clustered separately. This permitted analysts to conclude that, while similarities existed, Hussein's intentions were much more limited in scope in October 1994.[10] Software like Pathfinder, when incorporated into existing systems, significantly contributes to overall situational awareness by automatically processing and analyzing vast amounts of information. A collateral use for a Pathfinder-like capability is an information-protect mode to collect, establish audit trails, and "sniffer" data, among other information, to determine the security of our nets.

Document exploitation (DOCEX) is another area which confounds intelligence operations. Even if linguists are available, document translation is time-consuming and diverts scarce linguist resources from other equally or more important tasks. Translator software like the FALCON system being tested at Fort Bragg, North Carolina, would permit a quick document scan. If it is deemed to be of value and if linguists are not available on site, the document could then be electronically scanned, digitally transmitted to a DOCEX center, and returned later for user incorporation.

Other Improvements. There are other processing improvements to be undertaken. While signals intelligence (SIGINT) and imagery intelligence (IMINT) reporting more easily conforms to standard message format, upgrades in onboard processing would significantly ease problems encountered in processing data at either interim or major processing centers. Other promising initiatives include the building of neural networks to perform parallel processing, an increase in computing power to eliminate report backlogs, and the use of an integrated approach to sensor fusion.

Perhaps the biggest challenge ahead lies in the fusion architecture for obtaining inputs on enemy sightings by non-intelligence sources located throughout the battlespace. In addition to digitally connecting these assets across the battlefield, decisions are required on report generation, format, distribution, and the fusion process. These decisions should be made now so that architectures can be based on requirements, not technology. Because this issue cuts across all BFAs, it will be complex to resolve—especially if reporting software is hard to use or gets in the way of the primary mission.

Finally, digitization should allow a more realistic and speedy assessment of battle damage assessment (BDA). As Major General (USA, Retired) John F. Stewart, Jr., suggests, *"BDA is an art, not a science, and it is an emotional issue."* [11] However, through automated reporting, a BDA architecture, and a relational spreadsheet database linked to the main database, great strides can be made to objectively quantify this art.

Imagery Intelligence. Imagery technology continues to evolve. High quality, softcopy imagery can now be obtained by processing centers through TENCAP systems. At certain commands, the Mobile Imagery Exploitation System (MIES) and other Receive Locations (RL) permit first-phase exploitation of imagery in direct response to the commander's needs.[12] For other processing centers, such as JICs, divisional ACEs, and brigades with no organic RL, imagery can now be transmitted digitally using compression techniques.

Most of these centers have few imagery analysts. Therefore, imagery must be annotated before it is disseminated to these centers. In the future, as automated target recognition technology matures, basic imagery can be pushed to or pulled by these centers, and analysts can rapidly present the information to the commander. The combination of standardized formats, compression, digital imaging transmission advances, and new technologies will streamline the imagery architecture. As the national imagery community places its priority on and refines its support to the combat commander, the process, along with the technology, should provide the necessary imagery support.

Another form of imagery is video, provided by platforms like the UAV. Video terminals in command centers on the battlefield could provide real-time, excellent

resolution of targets or areas of interest. In the future, video will be displayed on multipurpose workstations, and video exploitation tools will ease the analytical process.

Analysis

We have addressed collection and processing, but before the correlated product is passed to the commander, there is one last important player—the analyst. Analysts play a critical role because they take all of this processed data and other information and create intelligence. This is where science and art merge to become "sciart."

It is important for analysts to understand the dynamics of data and how to leverage it for situational awareness. There is no lack of data on the digitized battlefield. Analysts create a product for the commander based on a multistep process. They take the enemy situation (provided by the intelligence processor) and the friendly situation (provided by a command and control (C^2) system) and add the "Blue" and "Red" political, economic, cultural, and psychological perspectives. They evaluate the significance of events and intangibles, such as morale. The analysts factor in what they know and do not know about the enemy, and assess possible, probable, or known enemy intentions. Thus, a product is formed to create the situational awareness that the commander needs. Analysis is a very ambiguous process. Knowledge-based tools are required for both the analysts and the decisionmaker. With further maturity, artificial intelligence is forecast to enhance the probability of an accurate and more-timely assessment.

Independent analysis can occur now at all intelligence centers on the battlefield, in sanctuaries, and in the national capital region. Each center reaches independent conclusions and develops its own interpretation or picture of the battlefield. The capability to independently create different views of the battlefield is important and necessary, because it allows us to tailor the picture and the assessment to the needs of the individual commander. Thus the new tools, enabled by technology, add another dimension to intelligence by permitting analysts to leverage the whole of the intelligence spectrum to reach the resolution and presentation required by commanders at all echelons. It might seem that we have created chaos—multiple, redundant, yet different pictures of the battlefield. The solution is for these pictures and assessments to be shared and agreed upon to create a common picture of the battlefield. In a division, for example, final approval of the common picture rests with the G2.

Dissemination

After processing, the next step is dissemination. The future lies in the "smart pull-brilliant push" architecture developed by the intelligence community. In the past, intelligence has been a hierarchical discipline, with information being pushed up or down from echelon to echelon. The new architecture permits skip-echelon and networked dissemination.

The "push" of information is best served when it responds to certain criteria. The criteria (continuously reevaluated) might be based on a time interval, on specific information needs, or on attainment of a new level of battlefield awareness. Entire databases can be pushed, if required, although this is not a quick or easy chore. This is primarily due to the lack of maturity in software, declassification issues, a continuing lack of systems interoperability, and communications challenges. Centers can also push updates or single pieces of information, as required, given the ability of the terminating machine to read the data. More often, it is an intelligence estimate (graphical and textual) that is pushed. This remains a time-consuming process, because there is too much human intervention and manipulation required to create updates as frequently as many commanders or centers request or expect. The bottom line is, while we are able to create and disseminate graphic and textual updates better than ever, we still have a long way to go before this process achieves the required maturity. "Pull" technology is progressing extraordinarily quickly and provides great promise. The ASAS Program Office is developing software which will allow users to pull information as needed.

An innovative dissemination initiative called Intelligence Link (INTELINK) is now in use. It permits users to enter its network and to pull desired information. INTELINK is based on the Internet concept and uses web browser software to negotiate through data. Organizations can create homepages, and archived text, databases, and imagery are available for any user with the appropriate password. INTELINK files can be converted by users to common user software graphic files to support further dissemination or manipulation. Additionally, at the request of a user, commands with homepages can place information or imagery on INTELINK for easy access. In the future, INTELINK may be organized both by command and by function, further increasing its utility to the user. It has been employed in experiments with the 4th Infantry Division (Mechanized) (4th ID (M)), for garrison and exercise intelligence operations, and in real-world contingency operations such as those in Haiti and Bosnia. Clearly, this type of user-friendly software would have equal applicability for C^2 in the other BFAs as well.

This Internet-like concept is the wave of the future. Many units have created homepages on ASAS-RWS to allow subordinate commands to pull intelligence. These homepages provide access to multiple databases, multimedia hypertext information, and graphics. The concept can be tailored to the user or the user can select, filter, display, and manipu-

late a variety of media and information as needed. Information can be stored in an interim file server until the consumer retrieves it, thereby freeing hard-drive space on the producer's system.

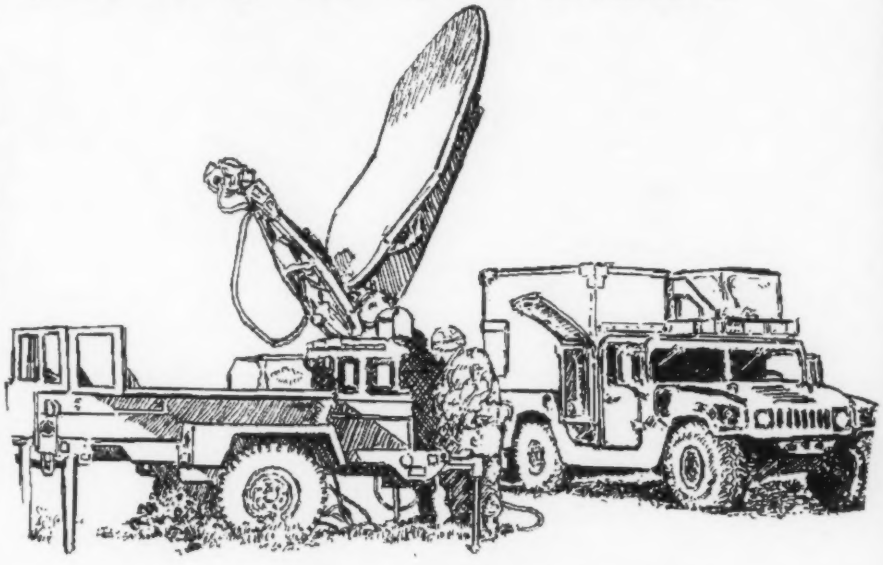
Broadcast dissemination is also a form of "push-pull" distribution which promises to bring great value-added to the battlefield. Broadcast has long been used by TENCAP and defense warning systems. Now, collaborative broadcast technology will permit processing centers to disseminate simultaneously to multiple users on the battlefield. Users can filter the information which is of value to them, thus avoiding extraneous information or information overload. Broadcast dissemination is especially valuable for high-value, fleeting targets with extremely short dwell time.

Communications

The digitized battlefield is completely dependent on reliable, secure communications for dissemination. To win the information war, we must dominate the electromagnetic spectrum. Shortcomings in communications have been documented during all contingencies; these shortcomings mainly deal with mobility, range, bandwidth, data rate, error rate, throughput, sufficiency, and redundancy. The intelligence community, alone, has overwhelmed the capability of communicators, thereby necessitating the introduction of TROJAN SPIRIT. Major General Stewart, in his DESERT STORM after-action report, called for a dedicated intelligence communications system.[13] TROJAN SPIRIT and the Joint Worldwide Intelligence Communications System (JWICS) remain the intelligence community's most reliable means of communications.

All of the Services are transitioning from an analog to a digital communications design. Force XXI initiatives in communications call for a greater reliance by all BFAs on satellite communications, fiber optics, wire, and long-range wireless systems. Most of the initiatives incorporate asynchronous transfer mode (ATM) and synchronous optical network (SONET) technology, cellular technology, efficient antennas, packet and multimedia compression, protocol filtering, automating routing and reconfiguration, and improved data modems. The 4th ID (M) has used ATM to set up multimedia networks. This includes installing ATM switches in the Mobile Subscriber Network to optimize bandwidth. The Global Broadcasting System (GBS) and the Direct Broadcasting System (DBS) should make broadcast dissemination commonplace. The tactical internet is expected to provide a seamless communications network on the tactical battlefield.

It is critical that we have these communications capabilities and that they be interoperable, from foxhole to the national command center. Things that increase complexity—routers, bridges, packet switches, satellite circuits—must be simplified to prevent potential transmission glitches. To ensure maximum operational efficiency, an automated network planning management and troubleshooting system must be installed. As with sensors, there will never be enough bandwidth. An "appetite suppressant," focused commander's critical information requirements, and push-pull dissemination will help to keep the networks from oversaturation. We cannot meet the goals of Force XXI without the communications backbone.



Recommendations for Achieving Force XXI Goals

Combat commanders will need better situational awareness in Force XXI. The following improvements to the intelligence processes should be considered to meet that goal.

Collection. We must develop and integrate all sensors to provide a seamless collection web. Focus on the family of systems as the highest priority, but also incorporate new technology (like acoustic sensor arrays, voice identification, and onboard processing) where possible. Use special purpose-built systems, tailored to the environment. Beginning in the acquisition process, identify and develop all potential sources of information (both intelligence and non-intelligence systems) so that there is

one single sensor architecture. Develop and integrate collection requirements and intelligence synchronization-management tools to create one multi-echelon capability.

Processing. We should continue data processing and analysis initiatives, add analyst tools, and incorporate CI/HUMINT applications into the digitization architecture. We need to incorporate Pathfinder-like capabilities to permit analysts to comb through and organize large amounts of free text information. Refine document translator software and incorporate it into operations. Continue to add processing speed and parallel processing applications. Integrate imagery into processing and analysis. Develop a fusion architecture that addresses both intelligence and non-intelligence contributors to the common picture. Build the systems' architecture around the requirement and create one big, interactive database.

Dissemination. We should develop a "smart pull-brilliant push" architecture and field systems that get required information to the user quickly. Incorporate GBS and DBS technology to enable dissemination in tactical communications environments. Use compatible datalinks to the central processing systems to avoid complexity. Technology that can help prioritize, filter, alarm (for critical items), and aid commanders in decisionmaking should be a priority. Systems which interface with users should be developed like the Internet and INTELINK, with an ability to work from a homepage, pull what is desired, and display information in the form of a graphic representation with accompanying text and hyperlinks. Continue to improve the technical aspect of dynamic updates, with "quick" and "easy" being the watch-words.

Conclusion

Put simply, Force XXI is the future of our Army. With its advances, the Army can better dominate the battlespace, control the battlefield tempo, achieve overwhelming lethality, and execute a quicker, more decisive victory while minimizing casualties. The Army is well on its way to becoming a digitized and more situationally aware force.

Still, Force XXI plans for collection, processing, dissemination, and display processes are not sufficient to achieve complete situational awareness. Even if we apply all of the available technological tools, fog, friction, and human nature will intervene. We will never achieve total situational awareness. To say this aloud, or to advertise it, is to do commanders, intelligence officers, and all units across the battlefield a tremendous disservice. What we can say is that there is overwhelming evidence that we are significantly reducing the degree of uncertainty. What we know about the battlefield, its geometry, and the disposition, capability, and intentions of friendly and enemy units is exponentially greater than it has ever been before, and our situational awareness will continue to improve.

The Army's task is to endeavor continuously to limit the amount of uncertainty and to aid the commander in decisionmaking. We must continue to focus on gathering and presenting a picture of the battlefield that enables the commander to make decisions faster and that permits units to act more quickly than the adversary. The decisive advantage that is caused by an exponentially greater situational awareness of friendly and enemy forces will help to save lives and to win wars. C^4I is a force multiplier. Still, we need trained, astute leaders and soldiers who leverage the science of war to succeed at the art of war. It is this combination of technology and operational and strategic art in joint and multinational operations that will truly be the measure of how well we succeed in the 21st century.

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11. Then-Brigadier General (Promotable) John F. Stewart, Jr., **Operation Desert Storm, The Military Intelligence Story: A View from the G-2, 3rd U.S. Army** (Riyadh, Saudi Arabia, April 1991), 19.

12. Editor's Note: The "Receive Location," recently redesignated the "Dissemination Element (DE)", receives national data. These are usually fixed sites, except the MIES TENCAP systems which are mobile, deployable DEs (the only mobile ones in the Army).

13. Stewart, 29.

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Terrain Visualization Support in the 1st Cavalry Division

by Chief Warrant Officer Three Brian W. Haren

The challenge for today's terrain analysts is to provide an accurate, timely, and pertinent picture of the battlefield to commanders, planners, and operators throughout the division. This is a tough challenge, requiring careful application of skilled analysis, state-of-the-art automation, and a broad spectrum of data against a myriad of problems that strongly influence how the commander will fight the battle. This challenge is particularly strong in the 1st Cavalry Division, where, on a daily basis, we balance multiple requirements for terrain visualization support against multiple contingencies and exercises. This article outlines the terrain visualization efforts within the Division, how we meet these challenges, and how these challenges are helping to shape the future of Army topography.

Background

Army terrain analysis is in a transition period. Current topographic doctrine and tables of organization and equipment (TO&Es) were developed in the 1980s to address the needs of a forward-deployed, Europe-based force. This doctrine and the modified TO&Es (MTO&Es) structure emphasized analog production methods for limited types of terrain visualization products. These products were distributed in hardcopy format to a limited number of customers.

With the move toward a continental United States-based force projection Army that must manage concurrent multiple contingencies, the old doctrine and TO&Es no longer adequately support the force. Terrain analysts must now provide terrain visualization data and products to deployed forces on a fast-moving, widely-distributed battlefield. To meet this mission we need to incorporate new technology, data types, and battlefield information systems into our processes and products. Some recent developments in the commercial geographic-information system (GIS) field now allow the use of a broad range of digital data to more quickly and accurately answer most of today's terrain visualization requirements.

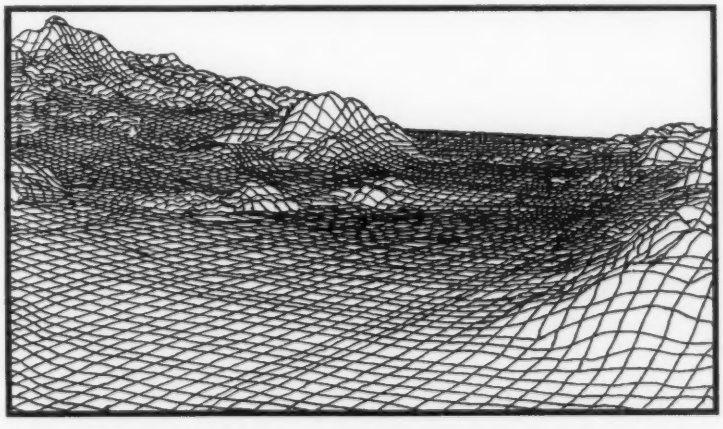
The 1st Cavalry Division Terrain Analysis Detachment, under the operational control of the Division G2, is executing missions every day that blend the newest technology and data to provide superior terrain visualization support to all echelons within the Division. The Advanced Warfighting Experiment (AWE) team and the 4th Infantry Division's Terrain Analysis Detachment are working to develop new doctrine, systems, and training requirements based on the projected battlefield of tomorrow. The 1st Cavalry Division's Terrain Analysis Detachment is meeting today's real-world mission requirements with the best technology available today, while it keeps an eye on the horizon.

Force Structure

In most divisions, the Engineer Terrain Analysis Detachments come under the operational control of the Division G2. This holds true in the 1st Cavalry Division, but the detachment is further subordinated to the G2 Plans section. This relationship is critical to the success of our terrain visualization efforts. As an integrated part of the G2 Plans section and because it works closely with the Division Planning Staff on a daily basis, the Terrain Analysis Detachment gets early and unambiguous notification of upcoming contingencies, contingency plans, and operations plans. This early notification is important because it gives the Terrain Analysis Detachment adequate time to assemble data and prepare tailored products to support the intelligence preparation of the battlefield (IPB) effort at both the division and brigade levels. The relationship with the G2 is also important because much of the data used to prepare or update terrain visualization products is available only via Secure Intelligence Protocol Router Network (SIPRNET) or other classified sources, and dissemination of finished visualization products in digital format is reasonable only via the G2's high-bandwidth communications architecture.

Recent Improvements

Rapid terrain visualization support is made possible by two fairly recent and fundamental changes in how terrain data is created and manipulated. Recognizing the need for automated terrain analysis systems, the U.S. Army Engi-



neer School is pursuing a series of initiatives that move Army terrain analysis away from the old analog methods and into the automated arena. One early and very successful initiative is the fielding of the Multispectral Imagery Processor (MSIP). The MSIP is a suite of commercial hardware and GIS software, with system integration software developed under the Combat Terrain Information Systems (CTIS) program.

The other important change is the recent widespread availability of terrain data in digital formats. Digital imagery is now available from national and commercial sources. Digital terrain data that describes in detail the natural and manmade features of the Earth's surface is available from the National Imagery and Mapping Agency (NIMA) (formerly the Defense Mapping Agency), the U.S. Geological Survey, and various other government agencies and commercial vendors. Combining this digital data with the power of the MSIP allows terrain analysts to create tailored terrain visualization products with a quality, variety, and speed never before possible using analog methods.

Another benefit of the move to digital data is the reduction in size of the terrain database. In the past, a terrain analysis detachment's database consisted of maps, overlays, photographs, and books. Today the same data is contained on compact discs and 8-mm computer tapes. The data storage requirements for a contingency area have shrunk from a small room to a small box.

Contingencies

The 1st Cavalry Division is a busy organization. We have real-world contingencies in Southwest Asia and Korea and frequent training rotations to the National Training Center (NTC). The Terrain Analysis Detachment frequently works on missions for two different contingency areas at the same time. As this article is being written, our analysts are using the MSIP system to create image maps of the Udairi Range in Kuwait, to process transportation and river data for Korea, and to print out terrain studies of NTC. Working on concurrent missions in different contingency areas means that we must store a lot of digital data online. The MSIP system in the Division has a total of 36 gigabytes of harddrive storage space and the drives routinely operate at 85- to 90-percent capacity.

A Terrain Visualization Product

As mentioned above, terrain visualization remains a fundamental part of the IPB process. For this process to be successful, the Terrain Analysis Detachment must provide, early on, an accurate and complete picture of the battlefield. Before the commander decides how he is going to fight the battle, he must know how the enemy will use the terrain and how the terrain will shape the fight. The answer to this question varies, depending on where the battle is taking place. We tailor our response based on geography, enemy, and mission.

For example, the terrain in North Korea is extremely restrictive and our greatest threat is the enemy's massed artillery. We need to find and neutralize this threat quickly. The challenge to the Terrain Analysis Detachment is to produce a product that clearly identifies those areas where the North Koreans cannot establish firing positions based on terrain restrictions. The Detachment has developed a product that highlights, in bright colors, those areas where, because of slope, the enemy cannot establish firing positions. While simple in concept and execution, the solution reflects a multidiscipline approach that is indicative of the Division planning staff at work:

- ☐ The G2 Plans Officer identified the requirement for a product that eliminates those areas where artillery will not be found.
- ☐ The All-Source Analysis Technician identified the baseline artillery systems and how they would be deployed.
- ☐ The Assistant Division Engineer identified the North Korean engineer assets normally available to artillery units and how they would help prepare firing positions.
- ☐ The Fire Support Plans Officer established the angle-of-fire restrictions.
- ☐ The Terrain Analysis Technician merged the requirements and developed the visualization product.

The finished product, labeled "Artillery Slope Analysis," takes the digital elevation file for Korea and breaks it into slope layers that determine where the artillery can or cannot set up. Next, it color-codes these slope layers and places them on top of digital maps (arc digitized raster graphics) for easy reference. This one simple product satisfies a variety of needs at all levels within the Division:

- ☐ The all-source analysis technicians use it to establish the enemy laydown.
- ☐ The Collection Manager uses it to establish efficient plans for collection asset coverage.
- ☐ The Deep Operations Cell uses it as the base targeting graphic.
- ☐ The Air Defense Artillery Plans Officer and Aviation Brigade S2 use it for developing air avenues of approach.
- ☐ Because the slope categories selected closely match the upper limits of U.S. wheeled vehicle capabilities, the division Transportation Officer and Assistant Division Engineer use it for main supply route selection and planning.

Intelligence and Engineer "Fusion"

Terrain visualization in the 1st Cavalry Division is successful because of the Terrain Analysis Detachment's full integration into the Division G2 staff. The terrain

Photo by Staff Sergeant Ross Schlichting

Warrant Officer One Brad Bartee (left) and Sergeant First Class Robert Switzer, from the 1st Cavalry Division G2 Analysis and Control Element, analyze an All-Source Analysis Enclave map screen.

analysis technician is a full and equal partner in the intelligence operations within the Division. Terrain analysts have unrestricted access to all pertinent intelligence data and resources commensurate with their levels of access. In garrison and in the field, the Terrain Analysis Detachment is co-located with the G2 Plans and Operations sections and our production cycle is synchronized with the G2's production cycle.

Access to intelligence data and resources improves the quality of the terrain detachment's analysis. In particular, the ability to access data via on-line resources has become critical. Agencies like NIMA, the Defense Intelligence Agency, Central Intelligence Agency, and others are beginning to archive their topographic data on-line so that authorized users can download them for use. Since it is much easier for an agency to store and update digital data, this data tends to be more current than similar information that was available in older hardcopy formats. The gateway to this data is through the SIPRNET. The MSIP in the 1st Cavalry Division is connected to the SIPRNET so that the terrain analysts can search for and download data directly onto the MSIP system.

Another important link is the access we have to imagery servers at the national and theater levels. The Terrain Analysis Detachment is the heaviest user of imagery in the Division. Commercial broad-area-coverage imagery (LANDSAT or SPOT (Satellite Pour l'Observation de la Terre)) forms the basis for most of the products we produce. National-source imagery, when used as image insets, helps focus and refine our analysis. Again, much of this information is available on-line. However, because of the limited access to these archives and the vast number of images available, the data search and download task is better left to the division imagery analysts. A close relationship with the division G2 imagery section, and the ability to sit with the imagery analysts as they search the image archives is critical, so that we can select the best images that meet the mission's requirements.

Once a product is finished, the fastest way to distribute it is on-line. Terrain products are passed to the imagery section in **.tif** format for archiving on the division imagery server and posting on the G2 homepage. Users can then view the product on the homepage and download the full file from the file transfer protocol (FTP) site. These terrain product files are large—several hundred megabytes in most cases. To avoid eating up disk space on the imagery server and to avoid choking the intelligence local area network while downloading large files, only the key products are made available on-line. Other products are plotted out and distributed in hardcopy format.

The Future

Recently, terrain visualization support within the 1st Cavalry Division has improved rapidly due to the blending of automated data processing and distribution. Nevertheless, there is still a lot of room for improvement. Our terrain analysts must continue to improve their analytical techniques using automated systems. Due to the complexity of the GIS software and the steep training curve, not all of our analysts are using the software to its full capabilities. We must continue to develop better ways to look at the available data, to develop more focused analysis, and to reduce the time required to develop a terrain visualization product.

Division-level terrain analysis detachments throughout the Army are operating under outmoded TO&Es. Personnel and equipment authorizations do not meet today's roles and missions. We must take the lessons we learned from our experiences and those from the AWE to establish a baseline division-level topographic structure that properly supports the division and is fully integrated into the division's automated intelligence architecture.

All said, the future of terrain visualization in the 1st Cavalry Division is bright. The Terrain Analysis Detachment will continue to provide innovative and timely support. Most importantly, they will pursue innovative ways to blend emerging technologies, data, and analytical skills to deliver faster and more precise terrain analysis to the warfighter.

Chief Warrant Officer Three Haren is the Commander, 123d Engineer Detachment (Terrain), and the Chief of the 1st Cavalry Division Terrain Analysis Detachment. He has served as Terrain Analysis Technician (215D) and Topographic Officer at III Corps, U.S. Army South, U.S. Southern Command, and XVIII Airborne Corps. CW3 Haren has a bachelor of arts degree from Bowling Green State University in Ohio. Readers can reach him at (254) 287-3532/6138, DSN 737-3532/6138, and via E-mail at harenb@hood-emh3.army.mil.

The Terrain Model: A Miniature Battlefield

by Captain John T. Chenery

Whether a full-scale mock-up of an objective or a small sand table, the terrain model is an invaluable tool for the combat leader to visualize fully the battlefield. All combat S2s should be proficient in the process of creating functional models in a variety of circumstances and conditions.

As CW3 Haren illustrates in his outstanding article, "Terrain Visualization Support in the 1st Cavalry Division," commanders have a number of available options for geographically representing the battlefield. This is a key step in the process of battlefield visualization and it aids the decision-making process. The next step is to recreate the terrain in a functional, three-dimensional (3D) manner to enhance the decision-making process. This article focuses on techniques and procedures the tactical S2 section can use to accomplish this important task.

U.S. Army photos

Terrain models can be made of prefabricated, painted styrofoam, like this board at Fort Huachuca, Arizona. Note the diecast metal enemy vehicles in march formation.

Concept

Think back for a moment to our days of back-lot football skirmishes. We would create spectacular plays in our head and then try to get everyone on the team to understand their various roles in executing the play. Well, you could talk until you were blue in the face trying to explain your idea, or you could just grab a stick and scratch the play out in the dirt. That simple process enabled everyone on the team to quickly visualize the playing field and their role in the play.

This may be over-simplifying a process we could employ in massive joint and combined arms combat operations in the Force XXIs of our future—but hey, it works! Keep it simple. By all means, take all the high-speed, 3D, super-digitized geographical gizmos you can get your hands on, but you know you cannot walk around on a computer screen. So until we can all fit on some deployable holographic simulation and rehearsal center, we will continue to build terrain models.

There will always be great utility in getting your tactical leaders out to a site where you have moved a little dirt around to recreate your unit's next objective. Use all of those 3D graphics, imagery, and map-overlay products to enable you to effectively build a functional terrain model and to help you convey your message. Make your model the best representation of the battlefield that time and resources will allow and you will find that it is the next-best thing to being there.

In his article, "What A Combat Commander Expects of His S2," published in the April-June 1997 edition of ***MIPB,*** Colonel Henry Kinnison says, "*Always ask yourself if your products are saving time and making the enemy situation clearer...*" He emphasizes that you must understand the wargaming process and the products you will need **before** you deploy. He later counsels the S2 to organize his shop *"for the production of each intelligence product necessary for a completely successful wargame,"* and to *"have a well-run shop with well-rehearsed procedures."* Well, for battlefield visualization and wargaming, there is no better product than the functional terrain model.

The Kit

There are innumerable types and variations to the basic terrain model, so I will focus on what has worked for maneuver brigades and battalions in the light, fast-paced, and highly mobile 101st Airborne Division (Air Assault). It is easy to modify the kit recommended below for your own particular unit and situation.

The "nuts" and "bolts" of the terrain project is the terrain model kit. The kit is a simple box containing the basic tools that you will need to construct any terrain model (see Figure 1). It might contain laminated cardboard cutouts or meal, ready-to-eat (MRE) box pieces. These pieces can also be colored 3" x 5" index cards covered in combat acetate and marked with alcohol pens to depict unit symbology or equipment specifications.

Remember to mark these items boldly enough so that all wargaming participants can see them. Colored cord, engineer tape, and powdered chalk are great tools for marking graphic control measures, gridlines, and avenues of approach. Use the target cloth or MRE boxes to construct buildings or similar key items. Spray paint can help you to mark the target cloth, rocks, or dirt to show a particular item. (Make sure that you check local regulations about spray painting.) The smaller MRE component boxes and miscellaneous items are ideal for representing vehicles and equipment. Ensure that you secure each item to the ground with either a tent peg or a long nail. It is not a pretty sight when a sudden gust of wind hits an unprepared terrain model!

Prepare your kit and train today with what you will have when you deploy tomorrow. Use them in your staff and field exercises as well as in your intelligence training program. To save critical time during a deployment or in the theater of operations, prefabricate items you know you will need, like friendly unit and equipment symbols and basic threat equipment to the scale that is comfortable for your team.

Tools

- ☐ Topographic products and maps
- ☐ Imagery (LANDSAT/photos/video gun camera or reconnaissance)
- ☐ Patrol debriefs
- ☐ Operations order with graphics and intelligence estimate
- ☐ Cardboard (MRE boxes)
- ☐ Colored 3" x 5" cards
- ☐ Combat acetate
- ☐ Target cloth
- ☐ Engineer tape (cloth ribbon) and cord
- ☐ Wooden stakes or tent pegs
- ☐ Long nails (to secure each item)
- ☐ Alcohol pens or markers
- ☐ Spray paint (various colors)
- ☐ Powdered chalk and, if possible, chalking roller
- ☐ Pioneer tools (add a rake if possible)
- ☐ 100 mph tape and cord (of course)

Figure 1. Terrain Model Kit.

The Construction

When it comes time to move some dirt around, take a few minutes to carefully select a proper site. Consider security first and convenience second. Ideally, your model should be concealed in a wood line or in a depression. If this is not feasible, try placing it adjacent to the command post, plans, or briefing tents. It can also be blocked-in by tracked or wheeled vehicles and covered with camouflage nets. When considering the site, ask yourself a few questions: "How long will I be in this location? What will happen if it rains? Can I secure this site with the resources at hand? Will this site limit the amount of work involved with moving dirt? The amount of work, level of detail, and scale will depend upon your available resources. Do not limit yourself, but realistically consider what engineer assets you have to assist you. Be careful not to bite off more than you can chew!

Set up your graphic aids and tools adjacent to the site and start by marking off the grids that you want to include. Use the engineer tape or chalk and "plant" cards around the grid displaying the gridline numbers. Next, brief your work detail. The key here is to consult the tactical operations center (TOC) commandant and the executive officer (XO) or S3 to ensure that they concur with the selected site prior to the beginning of any heavy work. I recommend the operations sergeant serve as the foreman, with the S2 noncommissioned officer in charge closely monitoring the quality and accuracy of the work. The Operations Sergeant usually "owns" the TOC soldiers in the field, but he may not participate in your predeployment terrain model drills. Simply think through the mix here, discuss it with the XO and S3, then decide what will work best for your unit.

A good example of how to use your assets wisely is a model we used in 3d Brigade, 101st Airborne Division (Air Assault). Prior to a rotation to the National Training Center, civil engineers on Fort Campbell, Kentucky, were called in to do the foundation work on a terrain model spanning an area that measured approximately 100 meters by 100 meters. Next, combat engineers built the mountain ranges and significant terrain features on our miniature battlefield. The Brigade's terrain team gave the project its final touches: smaller terrain features, structures, and chalked-in gridlines (five-kilometer squares). During wargaming, vehicle recognition models were borrowed from the Training and Audiovisual Support Center to simulate enemy and friendly battle formations. The result was a large-scale model that allowed all key leaders to stand in the maneuver box and walk through the rehearsals. This highly successful model was used by the entire task force (TF) right up until our deployment.

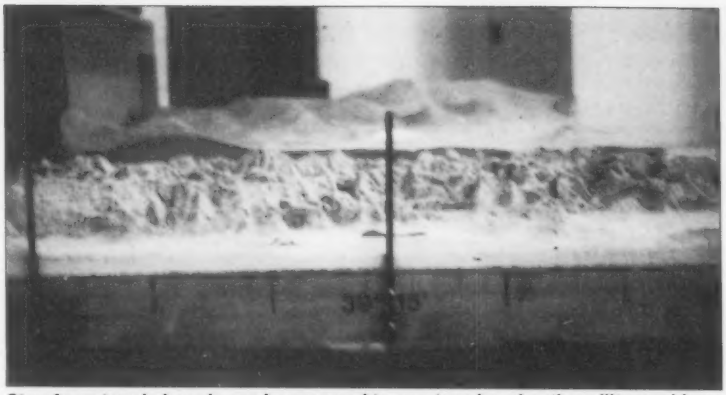
The final touches will be up to you. As a suggestion, you can use colored cards to label key terrain or manmade items. For key terrain, you should label the grid coordinates, the actual name, or the code name (or all three). The 3" x 5" index cards are perfect for this purpose, and you should use a color system for easier identification. For example, green cards might be used for key terrain, blue for operational graphics or control measures, orange for key manmade features, and white for grid references. A color scheme like this one really helps the folks in the cheap seats to understand the model. After you have laid down the enemy and friendly dispositions (with your MRE component boxes) and operational graphics (with the colored engineer tape), set up the briefing

area. Post some of the graphics and imagery at the site just prior to wargaming to enhance the leaders' perspective and to enable them to visualize the battlefield fully. You are now ready for wargaming. It is beyond the scope of this short article to discuss the wargaming process, but suffice it to say that it is a critical task in which you **must** become proficient.

After the wargaming sessions but before you depart, consider the security implications of your terrain model. What should you remove from the model to allow you to leave it unsecured but also to allow for easy reconstruction if another unit needs to use the site later? Of course, you should police up all of the board pieces but any additional policing is completely situation-dependent. Just do not forget to completely sanitize the area before departure.

Conclusion

Each unit will have its own variation of the decisionmaking process, terrain modeling, and wargaming, and you must adhere to its procedures. However, there should always be time for a quick "rock drill," with TF leaders walking through the battle plan with a common picture of the battlefield: your terrain model! As a miniature battlefield, the terrain model is a highly useful platform upon which the battle plan can be visualized, evaluated, and rehearsed. Like a play drawn in the dust of a makeshift football field, a battle plan will be better understood by everyone on the team, and perhaps better executed, if it is visualized **before** the "snap of the ball."



Styrofoam terrain boards can be prepared to exact scale using the military grid system or the latitude/longitude system, as above.

Captain Chenery is currently a student at the Post Graduate Intelligence Program (PGIP), Joint Military Intelligence College, Bolling Air Force Base, Maryland. His tactical assignments include: commander of a headquarters and MI company team and infantry battalion and brigade S2. He holds a bachelors degree in Criminal Justice from Murray State University in Kentucky. Readers can contact him via E-mail at Cheneryj@aol.com.

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BATTLE DAMAGE ASSESSMENT

by Captain Glenn Dickenson

Enemy battle damage assessment (BDA) is an intelligence task that many units overlook or under-resource. During the heat of battle, BDA is often an afterthought. I created the system the 1st Cavalry Division used successfully during the Division Warfighter 1997. This system automated the BDA process and could be the basis for the incorporation of an automated BDA capability into the All-Source Analysis System (ASAS).

To emphasize the importance of the BDA process, a captain supervised the process of compiling the data for the division. The BDA team was made up of an officer in charge (OIC) (O-3), a noncommissioned officer in charge (NCOIC) (E-6), and a BDA specialist (E-4). As the OIC, I focused my team's efforts on two tasks: achieving situational awareness and pulling data from units. For a unit in contact, BDA is normally an afterthought. This is why the OIC must pull data proactively in lieu of simply compiling it. If you do not ask for it, the data may never be reported. Data was pulled from subordinate, adjacent, and higher units. The NCOIC focused on performing quality control on the data, mainly to prevent double reporting. The specialist maintained the BDA log and database.

Developing the System

Many units still use a manual tracking system with a vehicle picture for each major killing system. As a vehicle is destroyed, the vehicle is crossed off the unit's equipment sheet. This is effective for quick analysis, but turning this sheet into an automated briefing slide is difficult. Our system allows us to quickly produce briefing slides to update the commander at each shift-change brief. It can also display the damage to a unit after a significant engagement.

The database is the cornerstone of our system and, consequently, requires the most work. Prior to a deployment, the entire

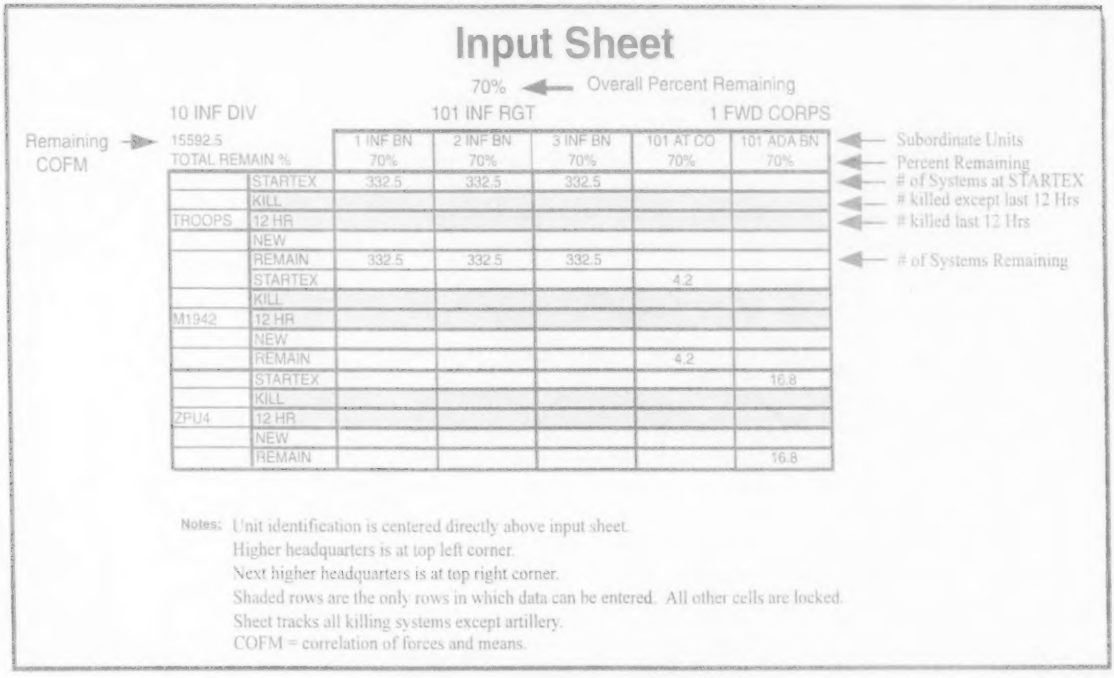

Figure 1. BDA Data Input Sheet.

enemy order of battle must be entered into the database. It takes approximately one month to input the entire order of battle for our division's area of interest. The database includes all of the killing systems in enemy units down to battalion level. The database (built in Microsoft Excel™) consists of three parts: the Input Sheet, the Data Sheet, and the Briefing Chart.

Using the BDA System

Input Sheet. The BDA specialist uses the input sheet (see Figure 1) to enter reported BDA data. It shows the starting strength, the number killed, and the number remaining for each killing system. The number of killed enemy weapon systems is divided into two parts: the number killed in the last twelve hours and the total number killed **except** in the last twelve hours. The specialist enters all new data into the "12 HR" row as reports come in and are analyzed. After each shift-change brief (every 12 hours), the BDA specialist must manually add the "12 HR" kills row to the "Kill" row to prepare for BDA tracking for the next 12 hours.

The purpose of the "New" row is to provide space on the printout to write in the numbers in case the computer crashes. The "New" row has no effect on the formulas in the sheet. It does not effect the charts or the slides that are described below.

Data Sheet. This sheet (see Figure 2) is fully automated and performs all of the calculations for the briefing chart using the data from the Input Sheet. It contains the formulas necessary to give percent strengths and the remaining correlation of forces and means (COFM) values.

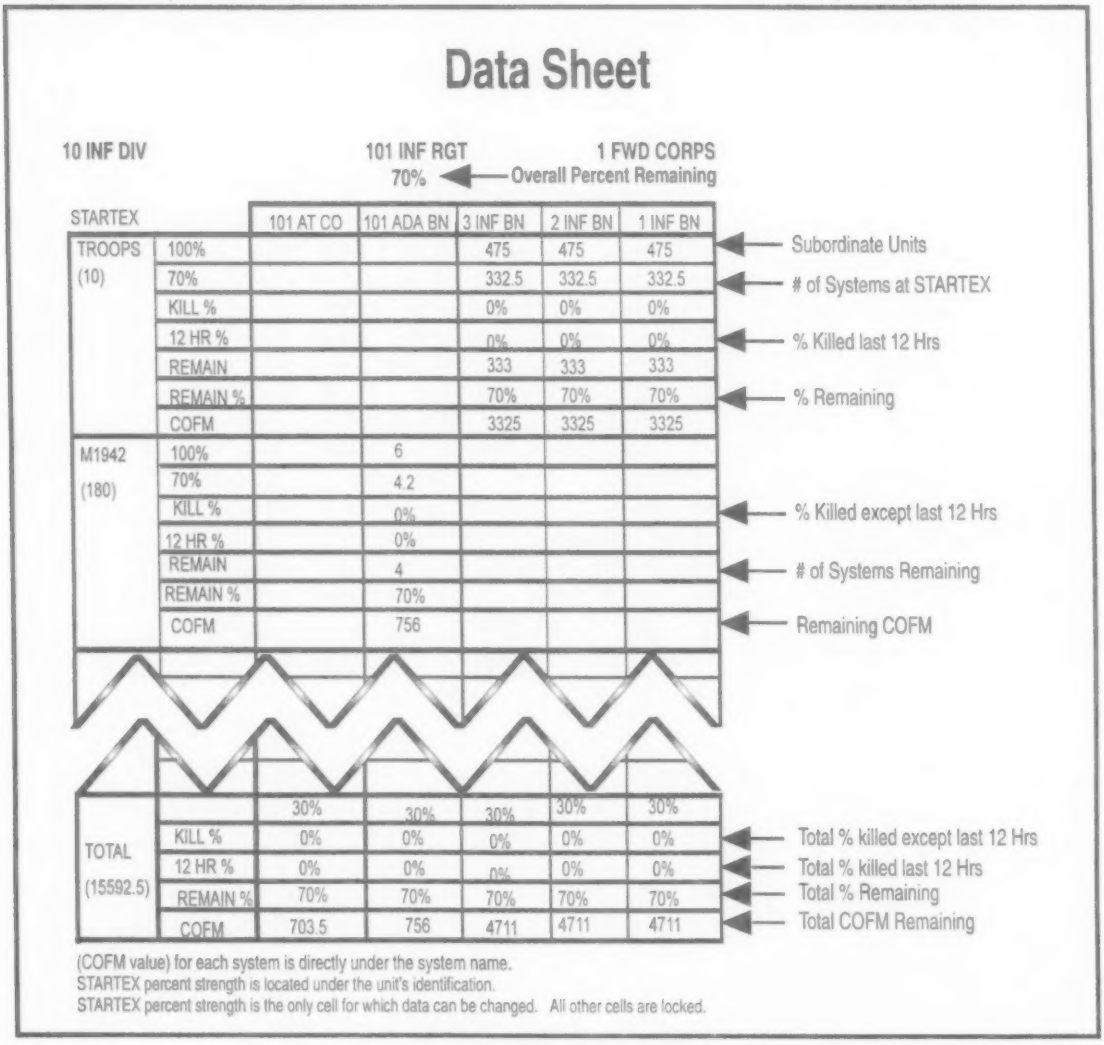

Figure 2. BDA Data Sheet.

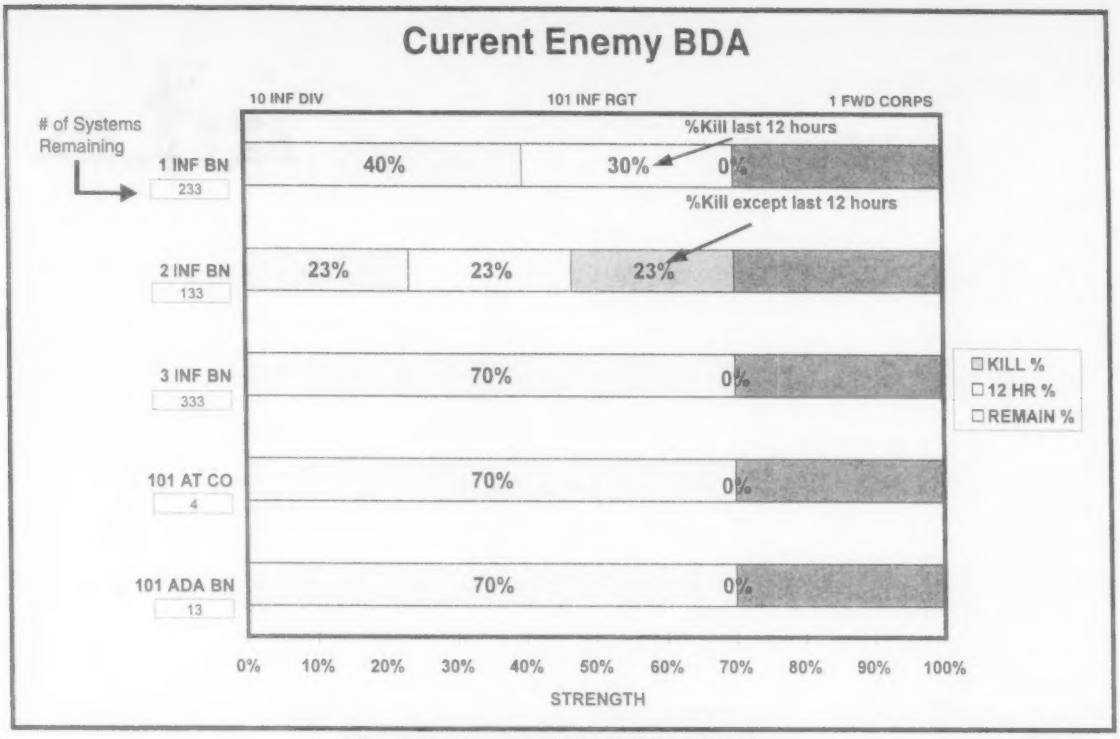

Figure 3. Commander's Briefing Chart.

The unit strength formula is calculated based on the total number of killing systems that remain. The COFM value also should have been a factor in calculating the unit strength, but by the time we realized this omission, we were already too far along in the process to change the production of the sheets. This is a needed improvement to the Data Sheet.

If units reconstitute, the additional systems are added to the start of exercise (STARTEX) percent on the data sheet. For example, if a unit's starting strength is 80 percent and it is 5 percent reconstituted, the OIC or NCOIC updates the starting strength to 85 percent on the Data Sheet.

Briefing Chart and Presentation. The information from the "Total" rows on the Data Sheet was used to build the BDA display charts in the spreadsheet software for use in briefings (see Figure 3). The charts are linked to slides in a graphics program to create briefing slides for the commander. Each change to the Input Sheet updates the presentation slides automatically.

Dissemination

This automated process easily calculates a unit's current strength percentage. The computer does all of the "number crunching" so the BDA team can focus on maintaining good quality control of the data, and on ensuring that units report the information in a timely manner.

The unit strength percentages are linked to a word processing document that we converted to the Internet Hypertext Markup Language and posted to the G2's tactical internet homepage. (See "Tactical Homepage Operations" on page 38.) Units can access the homepage to find the strength of any enemy unit down to battalion level.

A similar automated program could be integrated into the software that runs the ASAS system. A terminal could be established for the management of the BDA data. The enemy database that is already loaded in ASAS would reduce much of the preparation time needed prior to a deployment. An integral automated BDA system in ASAS would greatly help the analysts in the analysis and control element (ACE) because they would be able to show the current strength percentages on their products. This would allow them to incorporate that factor into their analysis of the enemy forces, hopefully bettering their analyses.

Captain Dickenson is currently the S4, 312th MI Battalion. His past duty positions include Deputy G2 Operations, S2 of an Engineering Brigade, and Platoon Leader in a jamming platoon. CPT Dickenson has a degree in Electrical Engineering from Virginia Military Institute. Readers can contact him telephonically at (817) 288-7424, DSN 738-7424, and via E-mail at dickensong@hood-emh3.army.mil.

Directing Intelligence Operations IV: Intelligence Battle Command

by Major John F. Lady, III (U.S. Army, Retired)

Intelligence is a fraternity where all work to help each other.
—Shipley Thomas, 1940[1]

In June 1993, **FM 100-5, Operations**, added the concept of battle command to the Army's doctrinal lexicon. That manual described [battle] command as—

The art of motivating and directing soldiers and their leaders into action to accomplish missions. Command means visualizing the current and future state of friendly and enemy forces and then formulating concepts of operations to accomplish the mission.[2]

General Frederick M. Franks, Jr. (U.S. Army, Retired), in his article "Battle Command: A Commander's Perspective," discusses the art of command. He relates why—

this was not so much a desire to change terminology as it was a way to open up fresh thinking that our Army really needed. There was not much wrong with command and control (C^2), other than that it came with many Cold War-associated thoughts....In our changed world...there would be no formulas, no set-piece scenarios, no battle books, no familiar terrain akin to the Fulda Gap.[3]

Battle command requires leaders to perform three key tasks: "*visualize the battlefield, assess the situation, and direct the military action required to achieve victory.*"[4] I will discuss these key tasks in this article. Battle command applies not only to the commander; it must guide leaders in every battlefield operating system (BOS). Indeed, the effective employment of battle command principles by staff members creates conditions in which the commander can better carry out his responsibilities.

"The commander drives intelligence,"[5] but the G2 must direct the intelligence effort based on the commander's guidance. Today's military realities require the G2 to employ the same principles of battle command as those that the "boss" employs. Intelligence battle command requires the G2 (or S2) to visualize the battlefield, direct intelligence actions to support mission accomplishment, and assess the situation. To exercise intelligence battle command for the primary intelligence task of situation development, the G2 distributes or coordinates responsibilities for intelligence collection, production, and reporting requirements in the area of interest. The G2 also provides for effective intelligence handover of enemy activity between friendly echelons in that area.

Visualize the Battlefield

The G2's battlefield visualization encompasses the interaction of significant enemy and environmental activities in view of planned friendly actions, all of which occur within a particular timeframe. That timeframe depends primarily on the commander's requirements and secondarily on those of the staff and subordinate commanders. Battlefield visualization relies on a comparison of friendly and enemy capabilities and courses of action (COAs); it also incorporates the anticipated effects of weather and terrain. This visualization focuses entirely on what may take place in the future. It draws logical conclusions based on situation development and precedes the direction of intelligence actions.

Battlefield visualization occupies the preeminent place among the intelligence battle command competencies. Inadequate emphasis on battlefield visualization practically guarantees lack of focus and efficiency in the direction of intelligence actions. It also can lead to a preoccupation with situation development. The G2 visualizes the battlefield using the framework of METT-T:

- ☐ Mission.
- ☐ Enemy.
- ☐ Terrain.
- ☐ Troops available.
- ☐ Time.

Mission. Battlefield visualization requires ongoing awareness of several aspects of the friendly mission. The unit possesses only one mission. No separate "intelligence" mission exists. The G2 requires both a conceptual and a spatial perspective of that mission.

The conceptual perspective requires understanding of the current operations order and any supplemental guidance from the commander. In addition to the unit's mission statement, the G2 must understand the commander's intent and concept of operation, where the commander will accept risk, and his envisioned end-state. In short, the G2 must know how the commander thinks the battle will develop, and when and where he expects forces to reach their culminating point(s).

The G2's knowledge of these aspects of the mission helps to focus on the friendly objective in time and location to better support its attainment. It further helps the G2 to mass limited intelligence resources against the most critical tasks and employ economy of force to support less important requirements.

The spatial component of mission awareness includes the areas of operation (AOs) and areas of interest (AIs). The AI should serve as the primary external limiting factor to the scope of the intelligence effort. Without such a limit, the G2 risks dilution of the effort.

Unfortunately, the AI remains—from the intelligence perspective—one of the least emphasized aspects in training exercises. Too many exercises limit their duration and scope, exclude competitive flank units, and restrict the enemy force's size, mission, and freedom of movement. These actions render the AI irrelevant.

Determination of the AI begins in the G2 section but requires the commander's approval. **FM 34-1, Intelligence and Electronic Warfare Operations**, defines the AI as—

> *the geographical area from which information and intelligence are required to permit planning or successful conduct of the command's operation. The AI is usually larger than the command's AO and battle space. The AI includes any threat forces or characteristics of the battlefield environment that will significantly influence the accomplishment of the command's mission.*[6]

When appropriate, the G2 designates component AIs for air, ground, political, or other relevant activities.[7]

Enemy. The G2 concentrates primarily on what the enemy **can** do and secondarily on what the enemy **is expected to** do. Without first describing what the enemy can do, it becomes virtually impossible to articulate what the enemy should do. Capabilities describe what the enemy **can** do at the individual BOS level. COAs, ranked in order of probability of occurrence, describe what the enemy **should** do at the combined arms level. Meaningful COA development cannot occur in the absence of a meticulously performed capability analysis.

The battlefield visualization process in the G2 shop results in an ongoing, thorough enumeration of capabilities the enemy can employ in the friendly AO (first priority) and AI (second priority). This enumeration addresses enemy capabilities in close, deep, and rear operations. The analysis and control element (ACE) portrays its assessment of the major enemy capabilities on situation and event templates, event matrices, graphic intelligence summaries, and analytical aids, such as a capabilities development chart (see Figure 1).

Doctrinal manuals have not yet clarified meaningful definitions for, or the essential differences between, capabilities and COAs.[8] A capability describes an enemy unit or element's capacity to accomplish a tactical task within one BOS. Capabilities constitute the building blocks of COAs.

The G2 continually assesses enemy capabilities across all BOSs, relative to the friendly mission and echelon of command. Figure 1 contains guidelines for capabilities development.

A capabilities-based analytical effort adds value to the intelligence production process. It makes apparent, and thus prods the staff to plan for, the most dangerous enemy action(s). It readily lends itself to visual display on situation and event templates.

The capabilities table (CT) (see Figure 2) is another tool for displaying this analysis. The CT describes enemy capabilities with the same analytical elements required of COAs: who (the unit under consideration), *"what (the type of operation), when (the time the action will begin), where (boundaries, axis, etc.), how (the use of assets), and why (the purpose or desired end-state)."*[9] Analysts update the CT as the situation requires. Figure 2 is a sample CT, with each capability numbered to facilitate grouping into COAs.

At the collective level, analysts group capabilities from the various BOSs to form possible enemy COAs. An enemy COA describes a sequence of acts (capabilities executed) that the G2 expects an enemy unit to follow. A COA embraces activities in more than one BOS and is active until the accomplishment of that enemy

BOS	Enemy Capabilities
Intelligence	The Ability - - To collect and process intelligence, by discipline To detect friendly military deception measures To analyze friendly actions in time to trigger enemy reactions to infiltrate special operations or reconnaissance forces into the friendly AO
Maneuver	Of ground units up to three echelons below in the AO and one echelon below in the AI attack, defend, reinforce, or withdraw Of enemy air assault, airborne, amphibious, etc. units to execute tactical tasks
Fire Support	Of cannon and tube artillery to conduct maximum and sustained rates of fire upon specific areas
Mobility & Survivability	To deny or degrade friendly use of mobility corridors or avenues of approach at particular points To negotiate friendly obstacles To protect enemy forces from friendly combat actions
Air defense	To engage friendly rotary-wing aircraft at anticipated mission routes and altitudes To engage friendly fixed-wing aircraft
Combat service support	To support enemy capabilities, by BOS To support enemy courses of action
Command and Control	Of enemy headquarters one echelon higher than that in the maneuverBOS to integrate capabilities of various BOS into effective COAs To execute capabilities, considering battle damage assessments To conduct military deception

Figure 1. Sample Enemy Capabilities Development Chart.

unit's immediate mission. That aspect may require development of enemy COAs that continue in time beyond the anticipated accomplishment of the friendly mission and outside the friendly AO. Indeed, a complete enemy COA will address what the G2 expects the enemy to do while in the friendly AI.

The G2 develops enemy COAs completely within the enemy's frame of reference, using his terminology, his tactics, his tables of organization, and his timelines. Friendly boundaries exercise no restraint over enemy behavior. Unfortunately, friendly standing operating procedures (SOPs) do not compel the enemy to complete his most significant movements just in time for inclusion in the commander's morning update or the midnight intelligence summary (INTSUM). Friendly intelligence collection does not oblige the enemy to reveal or portray activities that will answer priority intelligence requirements (PIR).

Terrain. Terrain considerations include all environmental factors that affect the friendly mission. Terrain, weather, and airspace considerations all require attention, with the possible addition of political, maritime, and other factors.

Herein lies another potentially diluting influence on the intelligence effort. The G2 concentrates resources on how these factors specifically affect friendly and enemy COAs. For example, rather than routinely producing analyses for the entire AO, the G2 may find it more productive to focus the terrain analysis along potential avenues of approach.

Troops available. This category concerns the G2 in two respects: intelligence resources and intelligence consumers. Intelligence resources include organic and non-organic collectors, processors, the intelligence staff, intelligence automation systems, and dissemination means. Intelligence consumers include the commander, the staff (including the G2 shop), major subordinate commands (MSCs), higher headquarters, and flanking units.

The requirements of intelligence consumers will always exceed the capabilities of intelligence resources. This reality forces the G2 to prioritize throughout all the phases of the intelligence process: planning, requirement development, collection, analysis, production, and dissemination. Poor prioritization—or even worse, no prioritization—at any turn can unhinge the intelligence effort.

The large number of consumers and their requirements pose the greatest threat to the G2's visualization of the battlefield. The danger arises because many consumers need intelligence support now, or within a timeframe shorter than that required by the commander. The intrinsic validity of their competing requirements offers no consolation for this quandary.

The increasing quantities and capabilities of intelligence automation systems provide some support to the challenge of visualizing the battlefield. Most automation systems tend to focus the operator's attention on the current situation. Decreased personnel authorizations generally accompany increased automation systems authorizations, sometimes creating analyst shortages. Thinking boxes can help, but they can never replace thinking analysts.

The upward migration of collection system "ownership" adds fuel to this fire. Some maneuver brigades have no organic intelligence collection assets. Heavy divisions lost their long-range surveillance detachments. All divisions now must face the loss of communications intelligence (COMINT) collectors and additional cuts in human intelligence (HUMINT) collectors. Many of these assets have been replaced by more capable systems, but the "owners" exist at higher echelons. Numerous consumers compete for collection support from non-organic COMINT, HUMINT, and imagery intelligence systems.

Intelligence doctrine describes the G2's challenge. **FM 34-1** declares, "*intelligence operations have changed fundamentally from those of the Cold War model.*" Intelligence will no longer primarily *"flow from the ground [lower echelons] up to higher echelons [divisions, corps, and theater]."* Instead, in today's force projection military environment, the higher echelon must anticipate the needs of, and push intelligence support down to, its subordinate echelons.[10] True enough, since lower echelons are losing their organic ability to collect intelligence.

the G2 links the battlefield visualization and the assessment of the situation, thereby connecting the future and current aspects of the enemy situation

The reduction of organic intelligence collectors at lower echelons requires the next higher echelon to compensate by increasing the level of detail it reports to its subordinates. Brigades, for instance, require reporting on enemy company-size units. That requirement influences the division G2's decision to devote analytical support to meet that need.

Time. Time acts both to guide and to limit the intelligence effort. The commander determines the timeframe in which to focus the intelligence analysis effort. The 24-hour divisional and 72-hour corps time horizons may apply in many instances, but they do not necessarily satisfy every situation.

Time limits the extent of the intelligence effort in several ways. Higher headquarters specify certain timelines for requesting non-organic collection support. These procedures cause subordinate unit G2s to consider whether sufficient time exists to request, collect, process, produce, and disseminate intelligence from supporting sen-

#	Who	What	When	Where	How	Why
204	Tk Bn, 14th Inf Rgt	Counter Attack	Penetration of regimental defense	From NA 4883 to NA 4579	West along mobility corridor 2C	Destroy friendly bn or large. that has penetrated 2d ech bn
307	6th Tk Division Artillery Group	Sustain rate of fire: 9400 rds/ hour	Now	South Phase line LEE		Conduct Phase III fires
403	14th Mech Div	Construct minefield	At any time	Choke -Point at XD 332228	Artillery, air or ground emplacement	Delay our FSB (follow and support battalion) behind lead battalion by 1 hour

Figure 2. Sample Enemy Capabilities Table.

sors, given the anticipated latest time the information is of value. Further, higher headquarters typically dictates a series of time-based report requirements. For example, if a higher echelon requires an INTSUM at 0600 hours, the next lower echelon may require one at 0400 hours, and so on down to the battalion S2, who must submit an INTSUM to the brigade at 2000 hours. The unit's schedule of events also establishes work requirements for the G2, such as a twice-daily commander's update, a commander's "smart book," the deep operations planning meeting, target nominations for Air Force planning, and planning cell meetings.

While time affects the intelligence analysis effort, the G2 must prevent a time-based reporting mentality from hindering the urgency of the dissemination effort. Events can await inclusion in routinely scheduled INTSUMs. Many events require immediate reporting, particularly when considering the MSCs' intelligence needs. The lack of an event-based reporting system will certainly cause the tempo of operational activity to outpace the responsiveness of the intelligence system.

Assess the Situation

Situation assessment, the third component of intelligence battle command, occurs when the G2 evaluates the current status of enemy forces relative to friendly forces. In doing so, the G2 uses intelligence preparation of the battlefield (IPB) products and methods to compare the current enemy situation to his battlefield visualization of a future point in time.

The G2 uses situation assessment to confirm actions across the entire range of the intelligence cycle, internally and vertically. Within its G2 shop, the unit requires confirmation that—

- ☐ Organic and nonorganic collection systems are collecting and reporting on current PIR.
- ☐ Analysts are focusing on answering key "unknowns," updating the enemy capabilities table, and developing the right products.
- ☐ Enemy actions confirm or deny anticipated actions on the event or situation template.
- ☐ The dissemination system is responding to event-based reporting needs.

From the vertical perspective, the G2 staff verifies that subordinate and higher units understand the G2's view of the most probable enemy COA and the boundaries for their respective areas of intelligence responsibility (AIRs). (A message disseminated does not equal a concept understood.) The collective intelligence community should settle misunderstandings or disagreements regarding the enemy COA as soon as possible.

Lastly, the G2 checks the intelligence staff's understanding of the friendly situation. Based on this situation assessment, the G2 decides whether to alter or refocus any intelligence efforts or to revise the battlefield visualization.

Directing Intelligence Actions

Directing intelligence actions relies on the G2's battlefield visualization. The identification of distinct, feasible enemy capabilities during battlefield visualization provides the baseline against which the G2 can direct intelligence actions, such as focusing the analytical effort, tasking collection assets, or changing intelligence unit task organization or support relationships.

When directing intelligence actions, the G2 links the battlefield visualization and the assessment of the situation, thereby connecting the future and current aspects of the enemy situation. Other sources describe many of these actions; thus they do not require repetition here.[11] This section focuses on a critical intelligence action, the designation of an AIR.

Joint Publication 2-0 defines this joint term (AIR) as—

an area allocated to a commander in which the commander

is responsible for the provision of intelligence within the means at the commander's disposal.[12]

Higher headquarters should assign AIRs to subordinate headquarters, based on their ability to confirm enemy activity to the levels required by their commanders. Units collect, analyze, assess battle damage, and report on enemy activity within their AIR to higher, adjacent, and subordinate units.

Several factors impact on the size of the unit's AIR. These factors include the organic intelligence collection capability, size and pro- ficiency of the intelligence staff, availability of processors and intelligence automation systems, and the unit's authority to task or request support from non-organic sensors. Normally, a unit's AIR conforms to its AO, except for its forward boundary. The AIR generally will include terrain beyond the forward boundary of the AO.

The intelligence handover line (IHL) designates the boundary between AIRs. The collection manager establishes IHLs to—

- ☐ Facilitate coordination between a unit and its subordinates.
- ☐ Direct units to track threat units and high-payoff targets in their areas.
- ☐ Hand over intelligence responsibility for areas of the battlefield.[13]

A unit may define the IHL either dynamically or conceptually. A dynamic definition is of more use in a rapidly changing situation involving lower echelon units. For example, a division IHL remains three kilometers (km) in front of its committed brigades' forward-lines-of-own-troops (FLOTs). This technique requires continuous situation updates from the subordinate unit. In most other circumstances, the IHL will coincide with a phase line.

The IHL process works best in conjunction with event-based reporting. To ensure that it meets its intelligence needs, the higher unit should consult with its MSCs before developing its event-based reporting criteria. To complete this process, the higher headquarters and subordinate unit(s) may agree on a distance from the FLOT at which the higher unit warns the MSC of impending handover. For example, a brigade could request warning of handover when an enemy unit moves to within 10 km of the FLOT.

Conclusion

Although the term "intelligence battle command" has not heretofore appeared in doctrinal writing, it really does not introduce any new concepts. I have tried to outline a logical methodology by which to address the more critical tasks facing tactical intelligence leaders. Intelligence battle command really calls attention to the basic doctrinal concepts that have long brought intelligence success on the field of battle.

No echelon has all the organic intelligence capabilities it needs to fully support the comander.... Commanders and MI leaders at higher echelons should anticipate the intelligence need of lower echelons and "push" tailored intelligence support down to them.[14]

These truths frame the situation faced by today's G2. They demand a cooperative endeavor between intelligence staffs of multiple echelons. They require the G2 to employ an intelligence operating framework that relates to the commander's operating framework.

The better the G2 understands the commander's thought process, the more likely it is that intelligence production will support the commander's critical intelligence needs. Intelligence battle command provides a method by which to seek similarity of thought processes with the commander, focuses the command's intelligence effort on the tasks that matter most, and provides accurate, timely support to subordinate units.

The author gratefully acknowledges the contributions of Lieutenant Colonel Medwyn "Pinky" Sloane (Retired) and Chief Warrant Officer Three Dan Rupp, who contributed to this article.

Endnotes

1. Thomas, Shipley, **S2 in Action**, (Harrisburg, PA: The Military Service Publishing Co., 1940), 8.
2. **FM 100-5, Operations** (Washington, D.C. : GPO, June 1993), 2-14.
3. Franks, General Frederick M., Jr., "Battle Command: A Commander's Perspective," ***Military Review***, 76.3 (1996), 5.
4. **FM 100-5**, 2-14.
5. **FM 34-1, Intelligence and Electronic Warfare Operations** (Washington, D.C.: GPO, September 1994), 1-4.
6. **FM 34-1**, Glossary-4. It is difficult to imagine circumstances under which the AI would be smaller than the AO or battlespace.
7. **FM 34-130, Intelligence Preparation of the Battlefield** (Washington, D.C.: GPO, July 1994), 2-6.
8. **FM 34-130** provides an excellent example, defining a capability as "the ability to successfully perform an operation or to accomplish an objective....Capabilities are stated in terms of broad COAs [courses of action] and supporting operations." (Glossary-5)
9. **FM 34-1**, Glossary-5.
10. **FM 34-1**, 1-1.
11. See, for example, "How the Commander Drives Intelligence" in ***Military Review***, May-June 1996 (Volume LXXVI, Number 3), and these articles in ***Military Intelligence Professional Bulletin***: "To Link or Not to Link PIR" and "The Case for Meaningful Information Requirements," July-September 1995 (Volume 21, Number 3) and "The G2's Intelligence Synchronization Plan," January-March 1996 (Volume 22, Number 1), all written by the author.
12. **Joint Publication 2-0, Joint Doctrine for Intelligence Support to Operations** (Washington, D.C.: GPO, 5 May 1995), Glossary-4.
13. See IHL discussion in **FM 34-2, Collection Management and Synchronization Planning** (Washington, D.C.: GPO, 8 March 1994), 2-4.
14. **FM 34-1**, 1-11 and 1-12.

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The Impact of OPMS XXI on MI Officers

by Lieutenant Colonel John M. Custer

Twenty-first century technology is changing our Army. What type of officer will we need for Force XXI? To answer this question, General Dennis J. Reimer, the Chief of Staff of the Army, chartered the Officer Personnel Management System (OPMS) XXI Task Force (TF). Implementation of the revised OPMS began on 1 October 1997 and will occur gradually over the next five years.

The options reviewed by the TF ranged from simply "tweaking" the current system to organizing the Army Competitive Category into four distinct career fields (CFs)—Operations (OP), Information Operations (IO), Institutional Support, and Operations Support—and assessing officers from point of commission into these career fields.

OPMS XXI on the Internet

There is a wealth of information available on the Internet that describes OPMS XXI. The basic OPMS XXI uniform resource locator address (URL) on the Internet is **http://www.army.mil/opms/**. This site offers a comprehensive briefing with 49 detailed slides, a section with many of the most frequently asked questions, information by year group, and point of contact lists.

Impact on MI Officers

Approximately 37 percent of newly selected MI branch majors will serve in other than the Operations CF. This percentage already includes those designated for the Army Acquisition Corps. Those officers who remain in the OP CF (SC 35) will serve in branch assignments (as S3s, XOs, battalion and brigade commanders, etc.) and functional integrator (branch immaterial) jobs. If you go into the OP CF, your time with troops will certainly increase, probably to three years as a major in an operational unit and up to 24 months in an S3 or XO position.

MI officers slotted into a career field other than the OP CF will serve in their previously designated functional area (FA). These officers will alternate between assignments in their functional areas and immaterial positions. Because of the technical nature of the jobs, the OPMS TF anticipates that many MI officers will desire to work in the IO CF in **FAs 30, 34, 40,** and **53.** These officers will perform a variety of IO missions in both table of organizations and equipment (TO&E) and table of distribution and allowances units.

The creation of **FA 30 (IO)** transcends today's nascent doctrine and describes talents the Army of 2010 will require. FA 30 will develop an officer who is familiar with planning and operations concepts and can provide the integration skills necessary to bridge the gap between the technical aspects of IO and the practicality of combat operations. The essence of the IO officer's responsibilities will revolve around the building and execution of an information operations campaign plan which optimizes both information systems and each of the battlefield operating systems.

FA 34 (Strategic Intelligence) will provide the Army with officers for positions requiring long-term background knowledge and study of particular geographic, political or demographic areas worldwide, and specific intelligence or communications systems knowledge. The creation of FA 34 will allow the Army to correct its critical shortage of field grade MI officers by allowing officers from all other branches to fill these billets.

FA 40 (Space Operations) will develop officers with expertise in space-related policy, technology, and operations in positions dealing directly with space issues on a daily basis. Access to, and use of, space-deployed systems will become an increasingly critical issue for Army 2010.

The current **FA 53 (Automation Systems Officer)** will dramatically expand to incorporate an Information Systems Management Officer, and an Automation Systems Engineer. The 53A would have responsibility for the technical synchronization of all information platforms within an organization's systems architecture. The FA 53B and 53D will be more technical areas of concentration.

Impact on Promotions

One change under OPMS XXI is that each officer will compete for promotion to lieutenant colonel and colonel only against other officers in their respective career fields. Promotion opportunity to LTC will be about equal between the career fields and slightly better than today. Promotion opportunity for former battalion commanders (OP CF) to O-6 will be less than it is today; in the other CFs it will be less than that of the OP CF, but significantly greater than it is today. Since all Command Selection List commands are in the OP CF, command opportunity will exist only for OP CF officers. Because a reduced number of MI officers will be considered for command, selection opportunity for both battalion and brigade command will significantly increase.

Implementation of OPMS XXI

The Army will not implement every piece of the new officer development system this fall. The implementation schedule proposed for CF designation boards and promotion boards operating under the career field-based Officer Development System can be found on the OPMS XXI website.

Lieutenant Colonel Custer is currently a student at the National War College. He has served in a variety of command and staff positions. He is a graduate of the University of Delaware and the Postgraduate Intelligence Program. Readers can contact him via E-mail at dunottar@ix.netcom.com.

American Counci

College Credit Recommendat

An evaluation team from the American Council for Education (ACE) visited the U.S. Army Intelligence Center and Fort Huachuca (USAIC&FH) from 11 through 13 June 1997 to evaluate 46 programs of instruction (POIs). Its mission was to determine whether the courses' contents equate to civilian college work and, if so, what amount of credit should be recommended for each course. The ACE team recommended credit for 28 of the 46 courses that they evaluated, but did not recommend credit for the other 18 courses because of the limited, specialized, or military-specific nature of those courses.

The results of this evaluation will be published in the 1998 edition of the **Guide to the Evaluation of Educational Experiences in the Armed Services**. The **Guide** is the standard reference tool used by the majority of U.S. colleges and universities to award credit for military education. Copies of the **Guide** can be viewed at the Education Center on your installation.

Keep in mind that the **Guide** is just that—a guide. The amount of credit awarded, if any, is entirely up to the college and varies among schools. Many of America's leading institutions of higher learning do not view military courses as academic "education," but as merely vocational training. The chart below details only the 28 courses the ACE team recommended for credit during its June 1997 evaluation.

Course Number	Course Title	Credit Hours	Subjects
3-30-C20-35D	Military Intelligence Officer Basic	1 2	Communications Principles of supervision
3-30-C22	Military Intelligence Officer Advanced (Version 1)	2 1 1 1 3	Technical writing Investigative techniques Surveillance techniques Counterterrorism procedures Principles of management
3-30-C22-35G	Military Intelligence Officer Advanced (Version 2)	2 1 1 1 3	Technical writing Counterterrorism Investigative techniques Surveillance techniques Principles of management
3A-F71/232-F11	All-Source Analysis System (ASAS) Master Analyst	3	Computer system diagnostics
3A-35D(T)	Military Intelligence Officer Transition	3	Intro to security (personnel/information)
3A-513E/ASI9C/ 233-ASI2T	Tactical Exploitation of National Capabilities (TENCAP) Data Analyst	3	Database applications
3A-5I3E/ASI9C/233-ASIT4 and 3B-F14/233-ASIT4	Enhanced Tactical Users Terminal (ETUT) Operator/Analyst	3 3	Computer system operations for manipulating text and graphic databases Computer workstation applications for text and graphic files
3B-ASI9C/233-ASIT4 233-F13/3B-ASI9C	Electronic Processing and Dissemination System (EPDS) Operator/Analyst	3	Database applications
3B-352C	Traffic Analysis Technician Warrant Officer Basic, Phase 2	2	Introduction to local area network
3C-F16	Counterintelligence Officer (AST 35E)	3	Investigative procedures
102-33R10	Electronic Warfare/Intercept Aviation Systems Repairer	3 1 3 4 4 3	Basic electronics laboratory DC circuits AC circuits Digital principles Solid state electronics Microprocessors

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ions For USAIC&FH Courses

Course Number	Course Title	Credit Hours	Subjects
102-33R10 (Cont.)	Electronic Warfare/Intercept Aviation Systems Repairer	4 4 2	Electronic systems troubleshooting and maintenance Electronic communications Soldering techniques
102-33R30	Electronic Warfare/Intercept Aviation Systems Repairer Basic Noncommissioned Officer (NCO)	3 3 2 2 2	Electronics troubleshooting and repair PC troubleshooting and maintenance Electronic communications Computer systems and organization Maintenance management
102-33T30	Electronic Warfare/Intercept Tactical Systems Repairer Basic Noncommissioned Officer (NCO)	2 2 3 3	Electronic measurement techniques Introduction to digital communications Computer system maintenance Maintenance management
102-33Y10	Strategic Systems Repairer	3 3 3 3 3 3 1	DC/AC circuits Solid state electronics Digital logic Electronic communications Microprocessors Computer systems troubleshooting and maintenance Soldering techniques
102-33Y30	Electronic Warfare/Intercept Strategic Systems Repairer Basic Noncommissioned Officer (NCO)	2 2 3 3	Electronic measurement techniques Introduction to digital communications Computer systems maintenance Maintenance management
150-F28	Constant Course Operator Terminal Maintenance	3	Computer peripheral maintenance
231-97G10	Multidisciplined Counterintelligence Specialist	3	Database applications
231-97G30	Multidisciplined Counterintelligence Analyst Basic Noncommissioned Officer (NCO)	3	Database applications
231-98K30	Non-Morse Interceptor/Analyst Basic Noncommissioned Officer (NCO)	2	Database applications
233-96J10	Noncommunications Interceptor/Analyst	3 3	Telecommunications signal theory and waveform analysis Signal analysis and security
233-98J30	Noncommunications Interceptor/Analyst Basic Noncommissioned Officer (NCO)	3	Database applications
241-97E10	Interrogator (Version 1)	6	Criminal investigation
241-97E10	Interrogator (Version 2)	6 1	Interrogation techniques Map analysis
242-96D10	Imagery Analyst	3 3 3	Display of geographical information Aerial photo interpretation Remote sensing
242-96D30	Imagery Analyst Basic Noncommissioned Officer (NCO)	2 2	Display of geographical information Geographical information systems
243-96B10	Intelligence Analyst	3 3 1	Map analysis Database applications Information/personnel security
244-97B10	Counterintelligence Agent	3 1	Security techniques Legal principles
244-97B30	Counterintelligence Agent Basic Noncommissioned Officer (NCO)	2	Investigative techniques

Intelligence Collection for Pen Box Operations

by Captain Mark J. Leszczak

The 1st Cavalry Division uses the penetration box (Pen Box) concept to focus the resources required to penetrate the enemy's defenses at the critical point on the battlefield, as designated by the division commander. The maneuver brigade commander who is assigned the Pen Box mission further refines the area of penetration to sustain the division's momentum in the attack. The end-state is the rapid penetration of the enemy's defenses and the destruction of his forces within the Pen Box.

The Pen Box Team

The 1st Cavalry Division's plans and targeting team is the nucleus for the development, refinement, and execution of the Pen Box. The team, collectively called the "Deep Operations Cell," includes representatives from all BOS elements. They ensure that their respective resources are planned for and incorporated into the synchronization plan to provide maximum lethal effects at the zone of penetration. They must also consider the protection of those assets involved in Pen Box operations.

Time	Key Event
H-72 to H-48	Intial targeting team review; Long-Range Surveillance Unit (LRSU) inserted
H-72 to H-24	National imagery and corps-level collection received
H-24 to H-12	Subsequent targeting team review; combat observation lasing team (COLT) inserted Phased National imagery and corps-level collection received Phased unmanned aerial vehicle collection begins
H-24	Initial Pen Box synchronization matrix completed
H-12 to H-hour	National imagery and corps-level collection received
H-12	Pen Box meeting #1: Final Pen Box refinement
H-8	Pen Box meeting #2: Initial targeting begins
H-6	Pen Box meeting #3: Brigade targets received
H-4	Division target cut-off; Final fire plan built
H-3	Fire plans received and passed from division artillery (DIVARTY) to units
H-2.5	AH-58s on station
H-2.25	Maneuver commander initiates fires
H-2	Phase I fires begin
H-1.5	Phase II fires begin
H-1	Phase III fires begin
H-hour	Friendly maneuver units enter Pen Box; DIVARTY provides additional fires as needed

Figure 1. Timetable of Key Events in 1st Cavalry Division Pen Box Operations.

The G2 section, including the Analysis and Control Element (ACE), plays a significant role in the Deep Operations Cell. Successful management of intelligence assets, which is the responsibility of the division's collection manager (CM), contributes immensely to the success or failure of the Pen Box.

The Pen Box is a product of the tactical decisionmaking process (TDMP) wargame. The development process begins approximately 72 to 48 hours prior to the initiation of Pen Box operations. Both the initial intelligence information collection effort and the position areas (PAs) for artillery emplacement are identified to support the fires associated with the penetration box. These PAs also influence the scheme of maneuver and the development of force protection measures for all critical assets. The priority intelligence requirements (PIR) associated with the Pen Box impact the development of the division collection plan and initial Intelligence Synchronization Matrix.

Pen Box Operations

The key events in 1st Cavalry Division Pen Box operations follow a rough timetable that I have summarized in Figure 1. From H-hour minus 48 hours to 36 hours (H-48 to H-36), the targeting team begins to adjust the location of the Pen Box, based on intelligence gathered as part of the deep effort. The 48-hour and 24-hour looks at the targets of the deep fight provide us with the ability to see the enemy in the expected Pen Box. With this information, the division can adjust the collection effort or scheme of maneuver as needed to support the expected location of the Pen Box. The key to this phase is to identify quickly which assets at theater, corps, or division are required to improve our picture of the Pen Box, especially those assets that require long-range adjustment

Phase I Collection

Targets: Emplaced Artillery

Asset	Echelon	Action
AH-58 teams	Division	CM coordinates with DFSCOORD and 4th BDE to put teams on station with NAIs and TAIs. Tasked through G3.
TPQ-36/-37	Division	CM requests DIVARTY to report all indicators able to support Pen Box operations.
QUICKFIX	Division	Will be tasked to identify and locate artillery units supporting Pen Box operations to cue UAV.
UAV (Hunter)	Division	CM tasks the UAV through MI Bn S3 to fly over the Pen Box enroute to the DAG and CAG to locate and identify HPTs that can support enemy actions within the box.
LRSU	Corps	CM submits a formal request for LRSU/SOF support before the start of Phase I.
IGRV	Corps	CM submits a formal request to Corps for IGRV to identify artillery units supporting the Pen Box.
Joint STARS	EAC	CM tasks the operator to monitor specific NAIs for movement/activity to cue UAV.
RC-135	EAC	CM request COMINT/ELINT information from Rivet Joint.

KEY

CAG - Corps Artillery Group
COMINT - Communications Intelligence
DAG - Division Artillery Group
DFSCOORD - Division Fire Support Coordinator
ELINT - Electronic Intelligence
HPTs - High-Priority Targets
IGRV - Improved Guardrail V
Joint STARS - Joint Surveillance Target Attack Radar System
LRSU - Long-Range Surveillance Unit
NAI - Named Area of Interest
SOF - Special Operations Forces
TAI - Target Area of Interest

Figure 2. Tasking of Collection Assets in Phase I.

and coordination such as the combat observation lasing team (COLT) and signals intelligence (SIGINT). At the same time, the targeting team plans air interdiction (AI) and other deep actions to remove the enemy's ability to affect the Pen Box.

From H-36 to H-24, the collection effort focuses on confirming the enemy disposition and the effective emplacement of collection assets. The division Pen Box team coordinates with the maneuver brigades for the aerial emplacement of COLT teams and any additional deep collection assets. This emplacement is best done in conjunction with the division's deep attack, conducted between H-24 and H-12.

During this same timeframe (H-36 to H-24), the targeting team conducts a subsequent review, refining its deep plans and the identification of AI targets. Initial close air support (CAS) allocations developed for maneuver units are published in the Air Tasking Order (ATO). Also, the brigade targeting team begins its initial input to the Pen Box process. The brigade team begins to identify initial Pen Box locations and to nominate targets that will require division resources to locate.

Between H-24 to H-12, the targeting team focuses on building an initial synchronization timeline for execution. CAS allocation is finalized for maneuver units based on any adjustments to the ATO. The maneuver brigade tasked with the Pen Box mission must refine the zone to the desired area of ten kilometers by ten kilometers. The intent here is not to obtain a perfect square box but to allow the division to focus the collection effort on the projected zone of penetration to support our scheme of maneuver and the targeting process.

At H-12, the Pen Box team meets to finalize the synchronization of all assets operating in support of the Pen Box operation. The team also meets at H-8 and H-6 to finalize mission requirements. Fire plans are built at the fire support element (FSE) at the division main command post (D-Main) and are refined as necessary. The FSE passes the plan to the division artillery (DIVARTY) tactical operations center fire direction center (FDC) NLT H-6, with the final revision due NLT H-4. After H-4, the division fire support coordinator (DFSCOORD) is the approving authority for targets in the target plan. Targets that are not on the target plan are passed to DIVARTY and are treated as targets of opportunity.

Pen Box Fire Plan

The penetration box concept cannot be successfully executed without thorough synchronization of lethal and nonlethal fires. The key difference between a Pen Box fire plan and a standard artillery preparatory fire plan is that **all** battlefield operating systems (BOSs) must be synchronized for Pen Box fires.

The 1st Cavalry Division's fire plan for the Pen Box is executed in three phases. In Phase I, fires focus on the destruction of all enemy artillery that can influence friendly elements as they pass through the Pen Box. These elements include both artillery in the Pen Box and artillery that can range it. Phase I fires begin at H-2 and last for around 30 minutes.

In Phase II, fires are focused on the destruction of enemy C^3 elements, maneuver counterattack forces that could influence friendly

maneuver units, and RISTA in and around the Pen Box. In addition, fire support elements will continue to engage artillery as required. Phase II fires begin at H-1.5 and also last for around 30 minutes.

In Phase III, all fires are concentrated on the destruction of enemy forces within the Pen Box. Phase III begins at H-1 and lasts until H-hour, when friendly units enter the Pen Box. After H-hour, artillery assets continue to provide additional fires as necessary.

Pen Box Collection Concept

The collection plan for the Pen Box becomes a primary focus of the overall collection effort for the division. The G2 section creates the observation plans for the Pen Box according to the targets of the three phases of the fire plan. Figures 2, 3, and 4 outline the tasking of various collection assets by phase.

The observation plan for Phase I targets, primarily emplaced artillery, includes AH-58 teams, TPQ-36/-37 counterbattery radar, and QUICKFIX and UAV flights. The collection effort for all phases, including Phase I, requires assistance from higher headquarters, including Improved Guardrail V (IGRV) from corps and Joint STARS from the theater command.

Phase II Collection

Targets: C^3 Nodes, RISTA, ADA

Asset	Echelon	Action
COLT teams	Division	CM coordinates with DFSCOORD and recommends placement of COLT teams to support Pen Box.
AH-58 teams	Division	Continue on station. Focused on DAGs.
QUICKFIX	Division	Focus on C^3 nodes, RISTA, and ADA units 12 hours out.
UAV (Outrider)	Division	CM tasks UAV to fly over the target area, looking for C^3, RISTA, and ADA.
LRSU	Corps	CM submits a formal request for LRSU/ SOF support before the start of Phase I.
IGRV	Corps	CM submits a formal request to Corps for IGRV to identify C^3 nodes, RISTA, and ADA.

Figure 3. Tasking of Collection Assets in Phase II.

The targets for Phase II—C^3 nodes; RISTA (reconnaissance, intelligence, surveillance, and target acquisition) assets; and air defense artillery (ADA) units—require the use of additional assets. The division tasks the scout units available to the division as well as all available COLT teams for collection on these targets. The collection manager also continues to task the assets used for Phase I target location (AH-58 teams, QUICKFIX, and UAV's).

In Phase III, the division begins to use the collection capabilities of its TLQ-17s, TRQ-32s, and TRAILBLAZERs for the location of Phase III targets, which include all maneuver units, their defensive positions, and their obstacles in the Pen Box. Reliable target location is critical to the destruction of enemy units in the Pen Box and the ability of the division to punch through the enemy's defenses.

Phase III Collection

Target: Maneuver Units, Defensive Positions, Obstacles

Asset	Echelon	Action
Scouts	Division	CM recommends targets 24-48 hours in advance for Phase III.
AH-58 teams	Division	Continue on station. Focused on DAGs.
UAV (Outrider)	Division	CM tasks UAV to fly over the target area looking for maneuver units.
TLQ-17	Division	CM tasks to identify all C^3 nodes, ADA, & artillery supporting Pen Box operations.
TRQ-32	Division	CM tasks to identify all C^3 nodes, ADA, & artillery supporting Pen Box operations.
TRAILBLAZER	Division	CM tasks to identify all C^3 nodes, ADA, & artillery supporting Pen Box operations.

Figure 4. Tasking of Collection Assets in Phase III.

Conclusion

The penetration box concept allows the 1st Cavalry Division to focus all of its assets at the critical point on the battlefield. It is the instrument that enables the division to accomplish one of the most difficult staff missions: synchronizing lethal and nonlethal fires to support the maneuver commander at the decisive point in the division's battlespace. The success of a Pen Box plan, however, relies heavily on how well the G2 can paint a picture of the Box. As always, good intelligence is critical to battlefield success.

Captain Leszczak is currently the All-Source Production Officer in Charge at the 312th MI Battalion. His past positions include Collection and Jamming Platoon Leader, Direct Support MI Company Executive Officer, Assistant S2, and S2. CPT Leszczak has a bachelor of science degree in Finance from Canisius College in Buffalo, New York. Readers can contact the author via E-mail at leszczakm@hood-emh3.army.mil or telephonically at (254) 287-9216 and DSN 737-9216.

3rd Weather Squadron Support to the 1st Cavalry Division

by Master Sergeant Milton G. Kooyman, Jr., USAF

The Army operates in all types of weather. Soldiers train in freezing temperatures while occupying in-ground foxholes. Tanks can traverse soggy terrain and cross swollen streams. Artillery shells can fire through clouds, rain, and snow.

In contrast, Air Force aircraft can be grounded by cloud cover and winds. Similarly, rough seas can limit the Navy's ability to perform certain missions. But the majority of the Army can fight in all types of weather.

Nevertheless, weather can have a significant impact on Army operations, especially because of the increasingly technological manner in which we fight. For that reason, the Army is still highly dependent on expert weather support. Army divisions rely on support from U.S. Air Force (USAF) personnel, like the 3d Weather Squadron which supports the 1st Cavalry Division.

Squadron History

The 3d Weather Squadron was formed at Barksdale Field (now Barksdale Air Force Base (AFB)), Louisiana, on 24 June 1937, as part of the Signal Corps. The 3d was one of the three original squadrons that eventually transferred from the Signal Corps to the Air Corps. Currently, the 3d Weather Squadron is aligned under the 3d Air Support Operations Group. Weather support to Fort Hood began in 1947 at the newly constructed Killeen AFB. Today, the award-winning 3d Weather Squadron—in addition to providing weather support to the Fort Hood complex—has operating locations at Forts Bliss, Huachuca, Riley, and Sill in Texas, Arizona, Kansas, and Oklahoma, respectively.

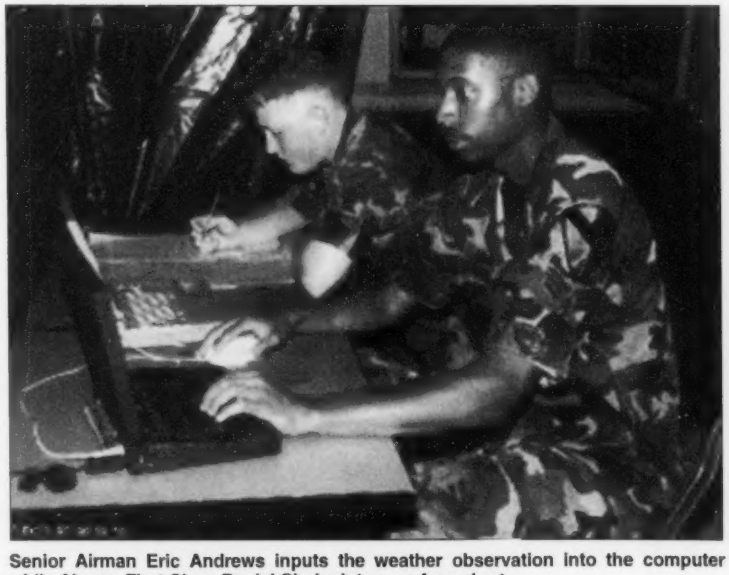
The 3d Weather Squadron is currently the largest base- or post-level weather unit in the Air Force. The support provided by the squadron is as diverse as its history and that of the Army customers it supports. For example, the squadron maintains a 24-hour observing and forecasting section at Robert Gray Army Airfield with extended observing hours at Hood Army Airfield.

Tactical Weather Teams

There are five tactical Weather Teams (WETMs) that support the following Army units at Fort Hood:

- ☐ III Corps.
- ☐ 1st Cavalry Division.
- ☐ 1st Cavalry Aviation Brigade.
- ☐ 4th Infantry Division (Mechanized).
- ☐ 4th Infantry Aviation Brigade.

Some of the services provided by the WETMs include both local and worldwide flying forecasts, climatic summaries, operations plan annexes, and semiannual weather briefings that provide our customers with the information they need to plan for operations and exercises.



Senior Airman Eric Andrews inputs the weather observation into the computer while Airman First Class Daniel Clark plots a surface chart.

The unit that works most closely with the 1st Cavalry Division is the 1st Cavalry WETM which is comprised of a staff weather officer (SWO), a noncommissioned officer in charge (NCOIC), two forecasters, and four observers. Aligned under the division's G2, the team supports the 1st Cavalry Division in numerous field exercises and contingency operations. The team has the opportunity to deploy, train, and hone its skills in some of the worst weather conditions that central Texas has to offer, including extreme heat, thunderstorms, tornadoes, and ice storms.

By working closely with the 1st Cavalry Division, the division's WETM has helped the "FIRST TEAM" to use the weather as a combat multiplier. Extensive interaction between the WETM and the division has paid off in various ways. For example, combat commanders learn how weapon systems will be affected by the current cloud cover and precipitation. Also, the commanders receive a precise forecast of expected terrain conditions. Figure 1 shows an example of one of our products that is designed to inform the commander of the effects that the weather will have on the tactical environment. Helicopter pilots are told the range at which they will be able to detect and destroy the enemy using their night vision and infrared devices. The division is better informed about its capabilities and limitations well in advance of the operation at hand.

Modernizing Equipment

The 1st Cavalry Division and the 3d Weather Squadron use some of the newest meteorological technology and state-of-the-art equipment available. At this time, the WETMs produce weather support information using an Integrated Meteorological System (IMETS). This advanced system allows for the interception of both alphanumeric and graphic weather information from numerous locations including all military and most civilian weather services. For example, the IMETS receives data concerning the upper air and surface conditions from the Air Force Global Weather Center. Weather charts and data can be received through high-frequency radio broadcast and satellite transmissions, telephone lines, and across local area networks (LANs).

The IMETS also has the ability to receive data through FM receivers; we can use these radios to transmit important weather information to numerous sites, both simultaneously and selectively. This ability has reduced the amount of time required to inform large numbers of airmen and soldiers of severe weather and dangerous meteorological situations including tornadoes, flooding, and thunderstorms with lightning. Due to the increased involvement of weather personnel with the 1st Cavalry Division's G2, damage to personnel and equipment has been dramatically reduced. Millions of dollars worth of equipment and dozens of lives have been saved due to enhanced meterological technology and the close working relationship between the 1st Cavalry Division and the 3d Weather Squadron.

The satellite receiver is another important piece of equipment that the 3d Weather Squadron takes to the field. It gives a forecaster the ability to receive satellite imagery. It also shows the forecasters a near-perfect picture of the weather across the globe. Given 1st Cavalry's worldwide mission, the WETMs must be able to support the Cavalry wherever and whenever they need it. Consequently, the teams must forecast for numerous areas at the same time. The satellite receivers give us the ability to provide such forecasts in a timely manner—even under austere field conditions.

Another tactical resource that the weather squadron can expoit is its access to the Secure Internet Protocol Router Network (SIPRNET) provided through the TROJAN Special Purpose Integrated Remote Intelligence Terminal (SPIRIT). TROJAN SPIRIT provides a more direct link to all field sites on the network, thus the teams can communicate with other weather sites around the

Fort Hood Weather Data

Light Data Valid (DTG): 28/0700- 29/0700 JUL 98

BMNT:	29/0543	Sunrise:	29/0634	Sun Set:	28/1939	Illum:
EENT:	28/2031	Moonrise:	28/1800	Moon Set:	29/0535	92%

24 Hour Forecast Valid 28/0700- 29/0700 JUL 98

Sky Cond:	Partly cloudy			
Vsby:	Unrestricted			
Winds:	NW at 5-10 knots, SE at 5-10 knots in the afternoon			
Temps:	MAX:	93	Min:	75

48 Hour Forecast Valid 29/0700- 30/0700 JUL 98

Sky Cond:	Partly cloudy			
Vsby:	Unrestricted			
Winds:	NW at 5-10 knots, SE at 5-10 knots in the afternoon			
Temps:	MAX:	95	Min:	76

72 Hour Forecast Valid 30/0700- 31/0700 JUL 98

Sky Cond:	Partly cloudy with isolated thunderstorms			
Vsby:	Unrestricted, except 4-6 miles in thunderstorms			
Winds:	SE at 5-10 knots during day, NW at 5-10 knots at night			
Temps:	MAX:	95	Min:	76

All Times are Eastern Standard Time

K BMNT: Beginning morning nautical twilight
E EENT: Ending evening nautical twilight
Y VSBY: Visibility

Figure 1. Sample Weather Data Report.

world. The two main weather-related sites on the SIPRNET are the Air Force Global Weather Center and the Fleet Numerical Meteorology and Oceanographic Center. These two sites allow the teams to intercept most of the weather data needed to create regional tactical forecasts.

Airman First Class Eric Andrews takes an observation with the TMQ-34 Tactical Meteorological Sensor.

Since the TROJAN SPIRIT is a "first-in" piece of equipment for contingencies, the only equipment needed by weather personnel for first-in operations is the weather-observing equipment and two laptops (one for connection to the TROJAN SPIRIT and one for connection to the tactical LAN (TACLAN) for communication with 1st Cavalry Division units). The TROJAN SPIRIT's global reach allows weather personnel to inform the 1st Cavalry Division of current meteorological conditions around the world.

The next step in modernization is a planned upgrade to the Block II IMETS that will allow the WETMs to establish their own "homepage" while tactically deployed. This communications breakthrough will allow other units on the TACLAN to access the weather unit's computers and to retrieve current weather satellite pictures, weather effects charts, local forecasts, and any other weather-related information that is required by combat commanders.

Custom Weather

The 1st Cavalry Division has requested custom-tailored weather data to support its day-to-day operations. Based on the information provided, the WETM provides climatological information, light data, and daily forecasts for locations specified by the commander (see Figure 2). These daily forecasts are available through the installation LAN and are E-mailed to numerous sections throughout the 1st Cavalry Division. Due to increased demand, the daily forecast is now available to everyone on post via a shared E-mail folder.

The 3d Weather Squadron recently established a homepage on the Internet from which the local Fort Hood forecast can be obtained. The homepage also reports climatological, solar, and lunar data for areas of interest to the various units at Fort Hood. The uniform resource locator (URL) for our unit's homepage is **http://150.114.103.44/fort_hood/3_ws/wthr.htm.**

Please feel free to check out our site on the Internet. Your helpful comments about the page are always welcome.

Unfavorable weather conditions on the battlefield can create a combat commander's worst nightmare. Marked technological improvements and good teamwork are increasingly taking the guesswork out of the weather's impact on Army operations. While there are still many "unknowns" in ground combat, the 3d Weather Squadron has transformed the weather forecast into a "known quantity"—information reported to and understood by the 1st Cavalry Division well in advance of any operation.

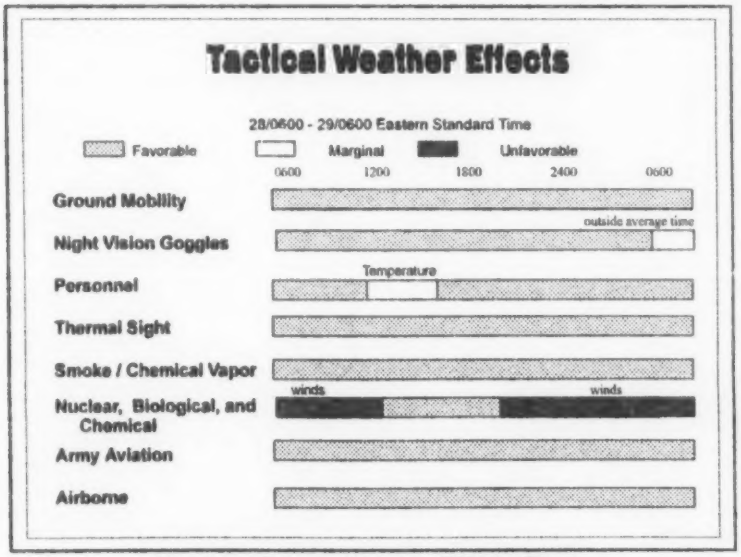


Figure 2. Sample Weather Effects Chart.

Master Sergeant Milton G. Kooyman, Jr., is currently the Chief, Weather Station Operations, at Cannon AFB, New Mexico. His prior assignments include Grand Forks AFB; Clark AFB in the Philippines; Andersen AFB in Guam; Lajes Field, Azores; and Finthen AAF and Sembach Air Base, Germany. He was the NCOIC of the Developmental Testing and Initial Operational Test and Evaluation for IMETS. He was NCOIC of the III Corps Cadre WETM and SWO for the 6th Combat Aviation Brigade and the 1st Cavalry Division. MSG Kooyman has an associate of science degree in Meteorology from the Community College of the Air Force. Readers can contact him via E-mail at kooymanm@og27.cannon.af.mil and telephonically at (505) 784-2264 and DSN 681-2749.

TACTICAL HOMEPAGE OPERATIONS

by Chief Warrant Officer Three Gregory Gluck

The views expressed in this article are those of the author and do not reflect the offical policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

The traditional problem associated with providing timely intelligence to tactical commanders is the inadequate communications methods available to the intelligence community for transmitting the data. The 1st Cavalry Division G2 and analysis and control element (ACE) have developed an intelligence dissemination method that has proven highly effective in supporting the subordinate commanders—the tactical homepage, which works on the client-server principle.

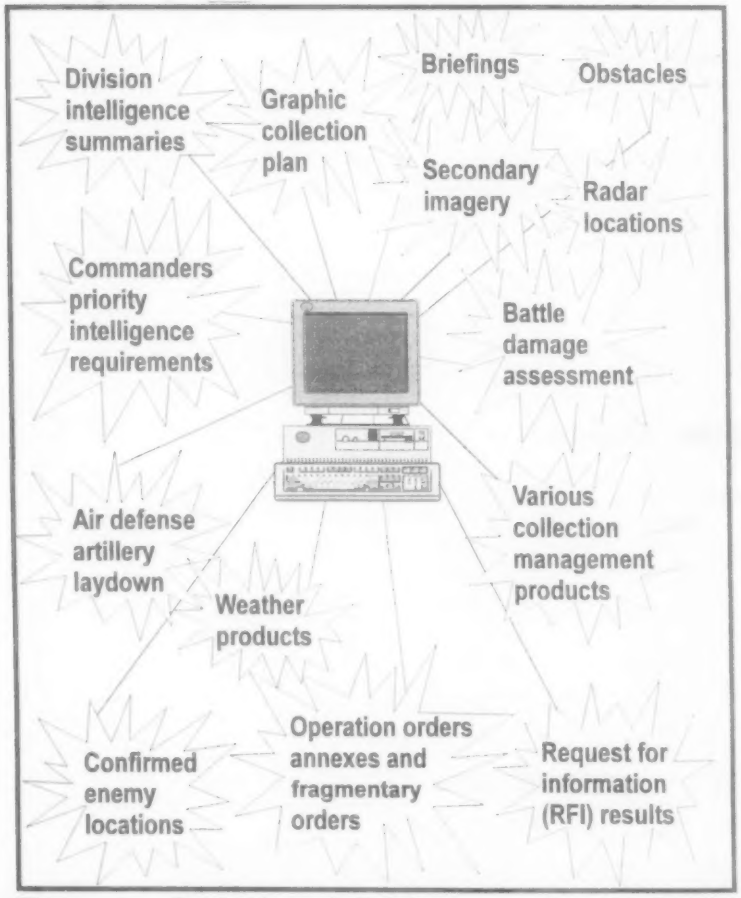


Figure 1. Products and Databases on the 1st Cavalry Division ACE's Homepage.

Previously, the ACE has used various methods of intelligence dissemination including tactical FM voice communications, tactical facsimile, and file transfer protocol. All of these methods ultimately proved to be too time consuming, labor intensive, unreliable and, most importantly, not timely.

Equipment and Operation

The tactical homepage resides on a standard Sun Sparc 20TM stand-alone computer, using hypertext transfer protocol (HTTP). The server connects directly to the division's Multiple Subscriber Equipment (MSE) tactical local area network (TACLAN). This provides connectivity up to Secret level to the entire division.

During field and contingency operations, the server connects to the division's MSE TACLAN as well as to the TROJAN Special Purpose Integrated Remote Intelligence Terminal (SPIRIT) LAN. Connection to the TROJAN SPIRIT LAN provides the division with wide-band high-speed access to the corps' homepage and to national-level intelligence databases.

Subordinate commands (clients) access the server through the MSE LAN using a personal computer (PC), usually a laptop model, equipped with a LAN card and a commercial net browser such as Mosaic™ or Netscape™ software. Clients can access the G2 server and retrieve current, near-real-time finished intelligence that has been processed and analyzed by the ACE. Clients have read-only access to intelligence information on the homepage. They can query the database and save their results to a

file which can then be further manipulated as required to meet the requirements of their commanders.

Available Products

Our tactical homepage offers a number of products and databases. They are posted to the G2 server on a periodic basis and include the items in Figure 1. The homepage also supports numerous blank message shells such as: RFIs, SALUTE (size, activity, location, unit, time, equipment) spot report format, RECCEXREPs (reconnaissance exploitation reports), friendly situation reports, and obstacle reports. These message shells can be accessed by any client, filled out, and submitted electronically to the G2 for action.

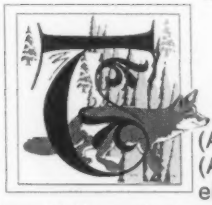
Final Thoughts

The tactical homepage has revolutionized the dissemination of intelligence during division operations. The need for subordinate units to continuously query the division G2 for information has virtually come to a halt. Now subordinate commanders have access to the same picture of the battle as the division commander.

The function of the tactical homepage has been incorporated into the All-Source Analysis System (ASAS) Remote Workstation (RWS). In the future, when the ASAS-RWS has been fielded down to the battalion level, the tactical homepage will probably become obsolete. The ASAS-RWS has one distinct advantage over the tactical homepage: the ability to graphically display the current enemy and friendly situations and to manipulate and annotate that information to meet each individual commander's needs.

Chief Warrant Officer Three Gluck is currently the ASAS Chief, ACE, Headquarters and Headquarters Company, 312th MI Battalion. His previous assignments include Enhanced Tactical Users Terminal Officer in Charge (ETUT OIC) and Signals Intelligence (SIGINT) Collection Manager in Panama; ETUT OIC and HUMINT CM in Saudi Arabia; and SIGINT Analyst in Germany. CW3 Gluck has an associate of arts degree in Liberal Arts from Central Texas College. Readers can contact him at (254) 287-9216, DSN 737-9216, and via E-mail at gluckg@hood-emh3.army.mil.

ASAS Master Analyst Program
Sly Fox Den ASI 1F Notes



The All-Source Analysis System (ASAS) Master Analyst Program (AMAP) is centered around an eight-week, additional skill identifier (ASI)-producing course. While soldiers in all MI military occupational specialties (MOSs) can attend the ASAS Master Analyst Course (AMAC), the ASI is awarded only to graduates in the 96B and 98C MOSs. The course is intended to take experienced ASAS operators and train them to be highly skilled analysts with the expertise to maximize ASAS system tools to solve intelligence problems.

The following comments are from Staff Sergeant Jeffrey S. Burns, a graduate of the first AMAC. He is now a new systems trainer in D Company, 309th MI Battalion.

"After spending eleven years in the Army and attending numerous schools and courses, I can honestly say that the AMAC is far and away the most demanding program I have encountered. Meeting the standards to become an expert analyst, trainer, and troubleshooter on the ASAS required dedication and perseverance throughout this rigorous eight-week course.

"Instruction covered the entire realm of ASAS, from intelligence theories to in-depth troubleshooting of the system. A typical day for a student included at least eight hours of instruction and hands-on training. At home, it was necessary to review the overwhelming amount of material covered that day to keep pace with the course. In addition to the graded assignment due the next day, a reading assignment was normally given. All of this would appear on the 'ritual' morning quiz given the following day.

"To add to the challenge, a research paper and tactical standard operating procedure drafts were due at various intervals throughout the course until the final products were turned in (the research paper was formally briefed). Needless to say, 'free time' was virtually nonexistent.

"Although it was demanding, we students learned volumes about ASAS. Not only did we study the functionality and troubleshooting of the individual ASAS components, we also studied how to arrange these components into a desired communications and information architecture. We also learned how to 'shape' intelligence to give an accurate battlefield picture and to produce products in support of mission requirements. Along with this, we developed training plans and strategies to produce and maintain competent operators."

Master Sergeant Michael Fallon is the Chief of the AMAP. For more information, readers can contact him via E-mail at amap@huachuca-emh1.army.mil or telephonically at (520) 533-4652 and DSN 821-4652.

Building a DS MI Company

by Captain H. Brock Harris

Under Force XXI, the direct support (DS) companies of a divisional military intelligence battalion are charged with providing the maneuver brigade commander with near-real-time (NRT) intelligence, a capability that did not previously exist. Bringing the DS concept to fruition will require extensive restructuring of our current modified tables of organization and equipment (MTO&Es) and training plans, patience, adherence to the fundamentals of successful training, and a willingness to "think outside the box." It is difficult to discuss the concept of DS without including Force XXI technology and architecture. So much has already been written about technology that I will discuss only the technical aspects of the DS company as background information. My real focus will be on sharing some of the practical lessons learned about building, training, and retaining a nascent DS MI company.

Setting the Stage

The new DS MI company replaces the "MI company team" concept of support to meet the maneuver brigade commander's intelligence needs. No longer an ad hoc grouping of divisional collection assets, the DS MI company provides a balanced mix of intelligence disciplines that are focused on the brigade's battlespace, responsible solely to the brigade commander, and under the immediate staff supervision of the brigade S2.[1] By MTO&E, the DS company is a thirty-four soldier unit, but with required attachments the total number of personnel normally exceeds fifty. To provide the supported brigade commander with a more robust intelligence package than in the past, the organization has been expanded to include the following assets:

- ☐ Ground surveillance radar (GSR) operators, interrogators, and counterintelligence (CI) agents.
- ☐ Analysis and Control Team (ACT).
- ☐ Unmanned Aerial Vehicle (UAV) Ground Control Station (GCS).
- ☐ Common Ground Station (CGS).

Previously, the MI company team and the intelligence electronic warfare support element (IEWSE), or IEW liaison officer (LNO), provided the brigade with products that were primarily based on signals intelligence (SIGINT). Through the DS company and the ACT, we now provide the commander with an NRT intelligence product that is based on multiple sources, made possible by the expanded intelligence connectivity available to the ACT (division-, theater-, and national-level feeds).[2] The analytical products developed in the ACT provide a visual presentation that satisfies the brigade commander's intelligence needs.

Figure 1 shows a comparison between the MI company team and the DS MI company concepts of support to the maneuver brigade.[3] (Please note that although the IEW LNO position was abolished, the ACT chief or the company commander must now perform those duties. While many argue that the duties went away with the position, that argument is not valid.) The MI company commander or the ACT chief (or both) must still perform such key responsiblities such as writing the brigade IEW Annex and paragraph

CAPABILITY	MI COMPANY TEAM CONCEPT	DIRECT SUPPORT MI COMPANY
Ground Surveillance Systems	12 systems in the I&S Company	4 systems per DS Company
Interrogators	1 team per brigade/division controlled	1 team per brigade/brigade controlled
Counterintelligence Agents	1 team per brigade/division controlled	1 team per brigade/brigade controlled
Electronic Support (ES)	Organic	Provided by the GS MI Company; theater and national broadcast dissemination.
Electronic Attack (EA)	Organic	Product of TDMP at brigade level; request through division G3 and executed by the GS MI Company. Process needs work.
Imagery Intelligence (IMINT) Collection	None	Organic UAV
Receive Broadcast Dissemination	None	Full spectrum of broadcast through CGS-P
ASAS	Limited /None	Automated function with ASAS-RWS

Key: **I&S** = Intelligence and Surveillance
GS = General Support
CGS-P = Common Ground Station-Prototype
TDMP = Tactical decisionmaking process

Figure 1. MI Company Team versus DS MI Company.

three of the brigade operations order, deconflicting terrain in the tactical operations center (TOC), and serving as the focal point for all of the MI assets working in the respective brigade's area of operations.

Figure 2 shows the ACT layout and Force XXI connectivity. The ACT cluster comprises two All-Source Analysis System-Remote Workstations (ASAS-RWS), the CGS, and the UAV GCS. These assets enable the DS company to remotely access the division's databases, gain NRT video from both the UAV element and the Joint Surveillance Target Attack Radar System (Joint STARS), and, by using the CGS, receive analyzed SIGINT from the Commanders Tactical Terminal Hybrid/Receive (CTT H/R). Draft doctrine for the DS MI company is found in **FM 34-80-1/ST, Task Force XXI Brigade Intelligence and Electronic Warfare Tactics, Techniques, and Procedures**, and is the source for much of this article.

Developing any product from scratch can create a stressful learning environment. What follows are some of the key lessons I learned while building a DS MI company in the 104th MI Battalion. I am sure that many will disagree with the content of this article. My comments are provided with the hope that those responsible for implementing the DS concept will be successful on the first attempt.

Lessons Learned

The relationship between the DS MI company commander and the S2 must be a good one. Establishing and maintaining successful relationships is dependent upon the efforts of those involved. The company commander must understand his role in relation to that of the brigade S2, the senior intelligence officer in the brigade. The increased capabilities found in the DS MI company exist so that we (the intelligence community) can provide a higher-quality product to the maneuver commander than ever before. According to **FM 34-80-1/ST**—

> *the brigade S2 is the focal point for these assets; the company commander executes his intelligence taskings. The DS company organization provides the brigade a level of operational autonomy needed for the close battle. The brigade shapes its vision of the battlespace by prioritizing, focusing, and directing the direct support company's organic capabilities while the company provides a command and control framework for the tactical tailoring of additional intelligence resources down to the brigade.*[4]

The new relationship between the brigade S2 and the DS MI company requires the company commander to incorporate the S2 section's professional development opportunities on the company training calendar. The brigade S2 is better resourced, qualified, and prepared to provide intelligence training to company personnel. Furthermore, participation in the S2's training program strengthens the relationship between the two entities and establishes a common baseline of knowledge about the enemy and about systems. Some will argue that such an arrangement sets the stage for a power struggle between the S2 and company commander, but I submit that the company commander must be willing to accept risk in order to ensure future success on the battlefield. Remember, it is a **team** effort and the two individuals must establish a relationship similar to that of the MI battalion commander and the G2. This relationship must be constantly nurtured, and must never be allowed to fall into the "we versus they" trap. No one benefits when the S2 and company commander are constantly at odds with each other.

A clear division of labor is required. There must also be a common understanding of the division of intelligence tasks between the S2 and the ACT. This is necessary to avoid duplication of effort, and to

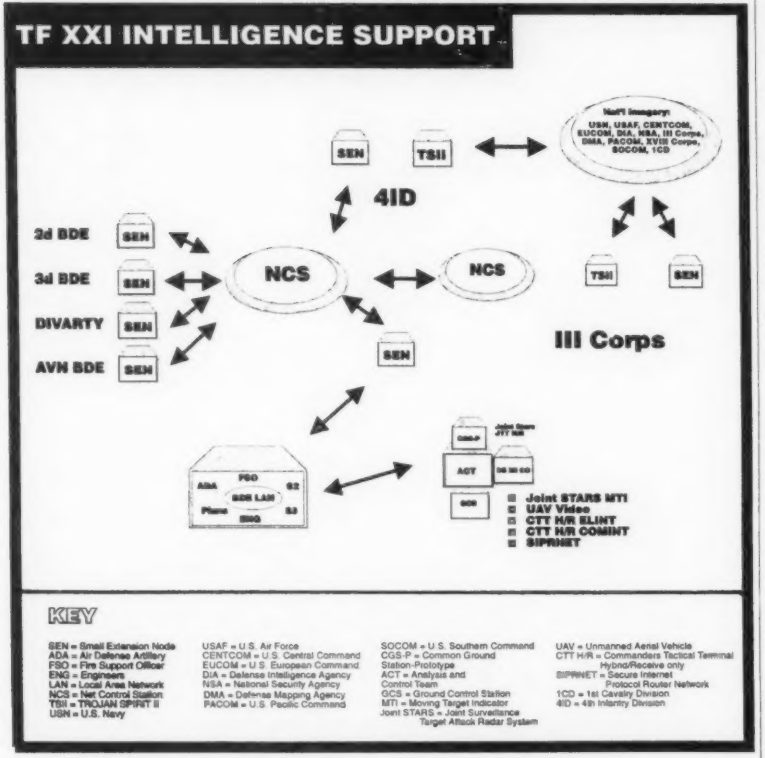


Figure 2. TF XXI ACT Layout and Connectivity.

ensure that the brigade collection and reconnaissance and surveillance plan is receiving the attention it demands. For example, I believe that the ACT is responsible for providing the brigade commander with the information he needs to make timely decisions, and that the S2 is responsible for analyzing the information provided by the ACT. The S2 must learn to trust the products that the ACT provides. At the same time, ACT personnel must understand the needs of the brigade commander and the S2. Currently, the division of labor is based primarily on the comfort levels of the S2, the company commander, and the ACT chief. Ownership of assets and task descriptions are key areas which must be understood by the brigade S2, S3, DS MI company commander, and company personnel. In time, intelligence-related responsibilities of the S2 and the ACT will be standard operating procedures (SOPs) based on approved tactics, techniques, and procedures (TTP). For a doctrinal discussion of the DS MI Company, see Coordinating Draft, **FM 34-10**, at URL **http://138.27.218.114**.

The ACT must be part of the brigade Tactical Operations Center (TOC). The lessons that we learned from two of the three National Training Center (NTC) rotations that we have undergone since implementing the DS concept justify this concept. For NTC Rotation 96-06, we attempted to test the ACT concept but, due to a lack of equipment, training, and proper military occupational specialty structure, the experiment was less than successful. During NTC Rotation 96-10, B Company, 104th MI Battalion, was successful in supporting its assigned brigade because the S2 and the company commander had spent about a year refining the concept. Both the S2 section and ACT personnel understood the requirements and expectations and had worked together to establish a working SOP. Initially, however, the ACT was located a good distance from the TOC because its capabilities were not fully understand by everyone. When the ACT was finally collocated with the TOC, there was a dramatic increase in productivity.

Photo by Captain J. L. Bell

Specialist Stheiner works on the ASAS-RWS, putting together the Brigade's Digital Situation Map.

During the recently completed Task Force XXI (TF XXI) Advanced Warfighting Experiment (AWE), the ACT proved its great potential to the Army but, again, location of the ACT relative to the TOC was a key issue. During the first half of the rotation, the ACT set up approximately fifty feet from the TOC. The distance created communication problems and caused a slow-down in the flow of reporting. During the second half of the rotation, the TOC and the ACT collocated and, according to one observer/controller, the ACT's production increased fivefold.

As we have all learned over time, accessibility is key. The collocation of the ACT with the brigade TOC almost ensures that the brigade commander and his staff will take full advantage of the ACT's capabilities. There are some security issues to consider when collocating with the TOC, but the increased productivity justifies the additional security requirements.

The ACT Chief is *not* the DS MI company executive officer. I made this mistake, and I hope that you will not. In garrison, the ACT chief can effectively juggle many functions traditionally accomplished by the executive officer (XO). However, it is impossible for her to accomplish ACT chief responsibilities and also to attend maintenance meetings during field operations. The ACT chief must know doctrine and systems and must ensure that all ACT personnel are fully proficient in these as well. A better use of resources is to shift traditional XO functions to the operations platoon leader. This frees up the ACT chief and develops the potential of the operations platoon leader.

Full integration into the brigade staff is a must. The DS company commander is an integral part of the brigade combat team battle staff, and is required to attend a number of brigade meetings. During an average week, the commander spends a minimum of 25 percent of his time attending brigade events. The commander should send lieutenants and warrant officers to these meetings when possible, but most meetings will require the commander's presence. While attending so many brigade functions makes commanding difficult, the arrangement does have a positive payoff. In addition to the improved relationship with the brigade S2 and S3, coordinating logistics is simplified. For example, under the area support concept,[5] it is now easier to arrange logistics support for company and MI battalion assets operating in the brigade area because of the established relationship between the company commander, the brigade S4, the brigade headquarters and headquarters company commander, and the supporting forward support battalion. In the past, arranging support was sometimes an overwhelming task for the IEW LNO.

The company commander must train all company officers, including warrant officers (WOs), to represent his interests at the brigade. The company commander cannot effectively command the company and serve as the intelligence LNO at the same time, all of the time. I required every company officer to participate in the brigade tactical decisionmaking process and to produce the IEW annex to the brigade order in at least one exercise. Do not make the mistake of "protecting" your officers and senior noncommissioned officers (NCOs) from this

process. It is good professional development for them, and there will be times when the company commander simply cannot be present. The commander's training plan must prepare company leaders for brigade duty.

Finally, integration of CI and interrogation of prisoners of war into the brigade planning process is a must. Work with the S2 to ensure that the brigade commander and S3 understand how to effectively use the skills of these intelligence assets. Employment of human intelligence (HUMINT) assets proved to be the most difficult aspect of the brigade integration process, but having quality WOs and NCOs who could provide solid advice and guidance proved to be beneficial. Listen to these experts. They know how best to conduct their business in support of a brigade—let them.

The DS MI company commander serves two masters. Although the DS company commander is not rated by anyone on the brigade staff, he is still accountable to the brigade commander at all times. The company commander must go out of his way to ensure that the brigade commander receives a quality product—just be careful when it comes to "ownership" of the company. For example, the uniqueness of Force XXI intelligence capabilities required that the ACT deploy virtually every time the TOC deployed. If the brigade is not predictable in its rollouts, life becomes difficult for the company.

Another difficult time is during a "Red Cycle." There is a tendency for brigades to task its attachments extensively while placing minimal requirements on organic units. We fought this inequity, arguing that "separates" should not be tasked at a greater percentage than the brigade's other units. If the entire brigade is "Red," then the DS MI company also should be Red. Be careful, however, because the company is sometimes Red when the rest of the brigade, and the MI battalion, are not. This issue may seem trivial, but allowing it to go unchecked will result in lower morale and an ineffective training plan.

The bottom line in supporting your brigade is that you provide a service that the brigade commander needs. Your company will enjoy great success if you apply the commercial theory of management—the customer is never wrong—to your brigade activities whenever possible.[6] It might sound a little corny, but it is an absolute must for success.

Technology training and retention. The TF XXI AWE taught us that a DS MI company must effectively use the technology it has. Attaining proficiency in the DS MI company concept is impossible unless our soldiers have a thorough understanding of computers and technology.[7] Each system must have at least three qualified and competent operators: day shift, night shift, and a back-up. However, you will discover that identifying operators is not nearly as difficult as is training and retaining them. Personnel shortages, training distracters, and stabilization problems pose serious risks to assembling a solid team.

To sustain perishable technology skills, a **minimum** of two training days per month must be set aside solely for system training. I believe that this requirement poses the greatest challenge to the DS company commander. Most units are already short of soldiers trained in the 96B military occupational specialty (MOS). Along with placing more 96Bs into an army hungry for their skills, we absolutely must do better at keeping seasoned soldiers in the Army. Retaining trained soldiers is a problem that I see only worsening as we undergo further downsizing. The Army as an institution must begin to offer better incentives to those soldiers who become systems experts.

Far too many of these soldiers leave the Army for better pay and better lives. This trend is likely to continue in the absence of drastic action aimed at keeping the good ones in uniform. Perhaps such incentives as **significant** bonuses, duty stations of choice, and long-term contracts **guaranteeing** retirement should be offered to keep our most competent operators in uniform. We are competing with a huge, more lucrative, and more hospitable civilian environment for the same precious human resources. We must offer soldiers unbeatable incentives to ensure that the decision to leave or stay is at least a challenging one to make.

Conclusion

The DS MI company is a powerful tool which must be constantly fine-tuned. The TF XXI AWE proved the feasibility of the DS concept, but it also showed the need for further development and refinement of the TTP required for long-term success. The challenge is there—can we rise to meet it?

Endnotes

1. **FM 34-80-1/ST** Writer's Draft, **Task Force XXI Brigade Intelligence And Electronic Warfare Tactics, Techniques, And Procedures**
2. **FM 34-80-1/ST.**
3. **FM 34-80-1/ST.**
4. **FM 34-80-1/ST.**
5. **FM 34-80, Brigade and Battalion Intelligence and Electronic Warfare Operations**, (Fort Huachuca, AZ: U.S. Army Intelligence Center and Fort Huachuca, April 1986).
6. Walton, Sam, **Made in America: My Story** (New York, NY: Doubleday, 1992).
7. A great resource is the **Warfighter's Guide to Intelligence Communications Architectures**, produced by Chief Warrant Officer Two Alfred Smith of the 704th MI Brigade. This document —discussed in more detail in the October-December 1996 issue of ***MIPB*** on page 4—provides a wealth of information on most of our systems, and is available in both compact disc-read only memory (CD-ROM) and printed formats. To obtain a copy, contact Master Sergeant Brown at (301) 688-6401/8528 or DSN 644-6401/8528.

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The New DS MI Company: Applying Technology to Defeat the Enemy

by Captain J. Lloyd Bell, Jr., Captain Alexandra M. Hoffner, First Lieutenant Lynn T. Merrel, and Staff Sergeant Michael D. Woods

"Beep." The stillness of the night seemed to make the small beep more urgent. The specialist glanced at his sensor monitor and quickly interpreted the numbers on the screen: a tracked vehicle moving south. Another beep. Then another. The specialist sent up the initial report, "Nine tracked vehicles moving south, grid location NK 855342, time 0347...over." His team sergeant, monitoring operations for the ACT, entered an enemy observation report on his Appliqué software. He informed the ACT Chief, "Lieutenant, we have 9 tracked vehicles vicinity NAI 20." The ACT Chief looked at the CGS operator and asked, "Can you confirm movement vicinity NAI 20?" "Roger, I have 10 moving targets," the CGS operator responded. Using the crew intercom, the ACT Chief spoke, "UAV, this is ACT. I need you to slew the camera to look at NAI 20. Center on grid NK 855342." "Moving!" the UAV pilot responded. The ACT Chief gave instructions to inform the Brigade S2 of her actions.

The Brigade S2 smiled. He knew that the ACT was pursuing aggressively the answers to the commander's question: Are there any tanks moving through the valley, approaching Phase Line Strike?

"ACT, this is UAV." The ACT Chief picked up her MESHNET[1] headset. "ACT Chief," she responded, "the target is in view, we have a targetable depression angle, and we see 8 tanks moving east." Turning to the ASAS-RWS operator, the ACT Chief said, "Put that on the digital situation template and get that out to the Battalion S2s now!" Writing on a SALUTE[2] report form, she gave instructions to her runner, "Give this to the FSO. Tell him that this is the target for which we were looking."

On 7 March 1997, 47 soldiers and 17 vehicles from A Company, 104th Military Intelligence Battalion, collectively known as the NIGHTHAWKS, deployed into the "maneuver box" at the National Training Center (NTC), Fort Irwin, California, to participate in the Army's Task Force XXI (TF XXI) Advanced Warfighting Experiment (AWE). Soon, the Army would know if all the training conducted by the soldiers of TF XXI on a myriad of sophisticated automation and communications systems was worthwhile. The previous months were consumed with late-evening training and a lot of time away from home, all in an effort to prepare this unit to meet the challenges of the experiment. Every soldier and all available resources were committed to making the TF XXI intelligence initiatives work.

Mission

To accomplish this experiment, the Direct Support (DS) MI Company was organized into two platoons. The Headquarters Platoon was composed of a headquarters section, the analysis and control team (ACT), and a unmanned aerial vehicle (UAV) team from the 15th MI Battalion of the 504th MI Brigade. The mission of this platoon was to provide the brigade with intelligence connectivity, process and fuse combat information to produce intelligence, and maintain the intelligence database. The Intelligence and Surveillance (I&S) Platoon consisted of a ground surveillance section and a human intelligence (HUMINT) section. The ground surveillance section had the mission of providing reconnaissance, security, and surveillance support to the 1st Brigade Combat Team (1BCT) by employing the Improved Remotely Monitored Battlefield Sensor System (the I-REMBASS). Unfortunately, the HUMINT teams did not participate in the AWE.

Equipment and Organization

To perform its mission and to field-test new intelligence systems and the concept of real-time intelligence at the brigade level, the ACT was outfitted with many new and

Photos by CPT J.L. Bell

Specialist Armstrong and Specialist Brownlow intergrate information received from the Joint STARS and the Commander's Tactical Terminal in the Common Ground Station-Prototype to predict the next move of the NTC OPFOR.

unfamiliar pieces of equipment. The fully digitized MI ACT consisted of five operational vehicles:

- Three vehicles—the Common Ground Station-Prototype (CGS-P), the UAV Mission Planning Shelter (MPS), and the UAV Ground Control Station (GCS)—were responsible for collecting combat information.
- One vehicle, the ACT Enclave, had responsibility for analyzing and fusing information gathered from an array of multidiscipline systems to produce intelligence for the 1BCT.
- The fifth vehicle, the TROJAN Special Purpose Integrated Remote Intelligence Terminal (TROJAN SPIRIT) II, disseminated the intelligence to the Battalion TFs and to the Division.

We considered the CGS-P, operated by six imagery ground station operators (96H), to be the backbone of our operation. It was the conduit to the real-time sensors never before accessible at the maneuver brigade level. An AN/PRC-140 radio and Surveillance Control Data Link (SCDL) antenna provided the voice and datalinks to the E-8 Joint Surveillance Target Attack Radar System (Joint STARS) aircraft. The Commander's Tactical Terminal-Hybrid/Receive Only (CTT-H/R) allowed us to exploit signals intelligence (SIGINT) data received from national, theater, and corps sensors, including the Guardrail Common Sensor (GRCS). The Integrated Data Modem (IDM) and two Single Channel Ground and Airborne Radio Systems (SINCGARS) System Improvement Plan (SIP) radios gave us voice and data communications with the Apache Longbow helicopter (AH-64D). The Surrogate Digital Radio (SDR)[3] and the database-to-database interface (DB^2I) received digital SIGINT information from the General Support Operations Center (GSOC) and the Ground-Based Common Sensor (GBCS).

The other two vehicles responsible for collection were the MPS and the GCS, which controlled the UAV. Two UAV operators (96U) worked in each of these shelters; a mission commander and data exploiter staffed the MPS while a pilot and a payload operator ran the GCS. The MPS was "hard-wire" linked to the GCS approximately 400 feet away from the ACT cluster. His link allowed us to dynamically re-task the UAV while it was in flight based on information collected by other sensors. A printer in the MPS provided a hardcopy snapshot of the targets which facilitated the targeting process without delaying the collection process.

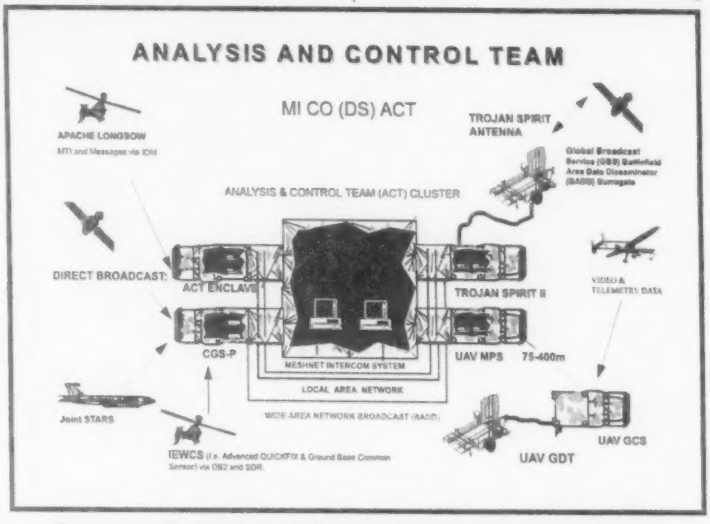

Figure 1. Analysis and Control Team Connectivity Chart.

Fusion and Dissemination

The volume of information now available at the brigade level via the CGS-P and MPS would be of little to no value without proper processing, filtration, analysis, and fusion. The ACT Enclave, staffed by four intelligence analysts (96B) and one SIGINT analyst (98C), was our fusion center. Here, two All-Source Analysis System-Remote Workstation (ASAS-RWS) computers provided a digital palette from which we could visualize information collected from all of the sensors on a single screen and then share it with the brigade and battalion S2s as well as the Division Analysis and Control Element-Forward (ACE-FWD). The ACT Enclave also housed the MESHNET Crew Intercom System, which allowed us to monitor the brigade's radio nets and telephones while maintaining communications with each other. The Appliqué software, a command and control initiative that provides message processing and friendly situational awareness, supplied the invaluable means to deconflict possible targets during collection.

Finally, the fused intelligence product had to reach the consumers. We found that the TROJAN SPIRIT II (TS II) was the best system to use for disseminating our product. As part of the Global Broadcast System-Battlefield Awareness and Data Disseminator (GBS-BADD) satellite uplink, the TS II transmitted UAV video, Joint STARS moving target indicators, and ASAS overlays to the subordinate battalions and the division tactical command post. The receiving computer system, the Warfighter Associate, could display the received data so that the Battalion S2s or the division ACE could do supplementary analysis and fusion.

The I&S Platoon employed an array of seismic-acoustic, magnetic, and infrared sensors, as well as repeaters throughout the battlefield. These sensors had repeaters with an increased range over their predecessors and an improved survivability due to their leaner configuration. Within the ACT cluster, the monitoring team collocated with the MI ACT in an M1025 high-mobility

multipurpose wheeled vehicle (HMMWV). A TA-312 telephone was used to report collected information to the team sergeant who assisted the MI ACT in the fusion of I-REMBASS information. Software to accommodate sending I-REMBASS sensor activity directly to an ASAS-RWS has been written, but its final integration into the system was not completed before the AWE. Inclusion of this software would have greatly enhanced the fusion of this data for reconnaissance, surveillance, and security operations.

Products

The possibilities that these initiatives presented were overwhelming. Our biggest challenge—aside from learning to effectively operate the equipment—was to develop timely, relevant, and accurate intelligence products. During the year-long training period, the hardware and software evolved drastically. We even arrived at Fort Irwin earlier than originally anticipated to receive more equipment with which we had never trained. As this evolution occurred, our methods of managing, producing, manipulating, displaying, and disseminating intelligence also changed. The phrase, "never do something the same way twice," became our battle cry. However, we managed to stick to the fundamental concepts of collecting, analyzing, producing, and disseminating intelligence.

We began the March 1997 NTC rotation with a plan to produce three digital-overlay products:

- ☐ An air defense (AD) overlay.
- ☐ An artillery overlay.
- ☐ A maneuver overlay.

The data that comprised these overlays came from information collected from our sensors, the spot reports generated from the TFs and the Brigade Reconnaissance Troop, and intelligence summaries from the Division ACE. We soon realized that this was an extraordinary amount of information and we were not able to properly manage all of the data. It was too much information to process and transform into a comprehensive product.

Therefore, we created a different overlay which included the analyzed maneuver data from the ACE and a compilation of intelligence information collected from our organic collection systems. This overlay was a digital situation map (SITMAP) which served our requirements well. The overlay that we created included all of the enemy battlefield operating systems (artillery, AD, and maneuver), all I-REMBASS sensor activity, the SIGINT text reported from the GSOC, and a depiction of the enemy course of action (COA) as it was understood. The data was color-coded based on the source. (For example, SIGINT was yellow and UAV data was red.) The overlay also included comments from our analysts to amplify enemy intent or future actions.

Although the modification of these products made them somewhat more useful, we found that digital products used in lieu of a SITMAP or corresponding analog products were not effective. On the ASAS-RWS or CGS-P monitors, the user must zoom in to plot unit icons on the digital map or to look at the terrain with a workable degree of resolution. This resulted in "analyst tunnel-vision" that led to a loss of focus on the "big" picture, thus de-synchronizing the unit's intelligence collection efforts. To counter this problem, we laminated a 1:50,000 map and as we received data, we posted it both to our analog map and to our digital overlay. To elaborate on a particular enemy COA, we could take our laminated map to explain our analytical opinion to the brigade staff. The digital product was used to present our "read of the enemy" to the battalion and to the division.

Suggestions

We had little time to develop our tactics, techniques and procedures (TTP) while testing ever-changing and maturing systems and software we had fielded. The brigade had little time to develop a deliberate and cooperative relationship with the MI ACT. Because of this, our organization weakened and it was difficult to establish the level of confidence required in an intelligence support team. This was a significant challenge that could have been avoided. Although we enjoyed tremendous success as an intelligence organization, we could have experienced even greater success if we had made the following adaptations at the start of the exercise.

Integrate the DS Company with the Brigade S2. First, it is extremely important to understand that the DS company has the mission to support the S2. Although the Brigade S2 is the senior intelligence officer in the Brigade, the DS Company Commander has the personnel resources and systems that accomplish the mission. The two must work as a team. It is imperative that

Captain Hoffner, the MI ACT Chief, briefs Major Weigeshoff, the Brigade S2, on her interpretation of moving targets which reveal the current disposition of the advancing NTC OPFOR.

tive that they have confidence in each other's work. Neither organization should ever discount any information on the sole basis that it has not been analyzed by their organic teams. The two sections must always work together with a single goal in mind: to provide intelligence to the commander so that he can make the important decisions earlier in the fight.

Our fears that this could not be accomplished led to a decision to keep the MI ACT a separate command post that was tethered to the brigade tactical operations center (TOC), approximately 300 to 400 feet away. During the course of the rotation, we made the decision to attach the MI ACT to the brigade TOC next to the brigade S2 operations' vehicle. The results were miraculous. When questioned, the analyst in the MI ACT could bring any brigade staff representative to the fusion map or to the Joint STARS terminal to view a particular piece of combat information or intelligence. The information flow became more streamlined, enhancing our ability to quickly disseminate intelligence. This was a definite enhancement to the concept of support. The MI ACT must be part of the brigade TOC and S2s must cooperate with the MI ACT to ensure that the commander is provided with quality intelligence.

Clarify digital duties. We did not establish a proper delineation of digital duties. There were times that the MI ACT was placing information into the ASAS database that had already been loaded by the Battalion S2s or by the Brigade S2. Additionally, the MI ACT developed enemy COAs through the ASAS while, at the same time, the S2 Plans section labored on a similar and duplicative product just a few hundred feet away. Although some effort went into determining the division of labor, a lot more coordination must occur to ensure that work is not duplicated and that soldiers are more efficiently employed when accomplishing their shared mission.

Manage collection assets effectively. One of the most important tasks that must be accomplished to properly focus intelligence is to manage collection assets effectively. This task requires the S2 section to have a thorough comprehension of the dynamic enemy situation, a clear understanding of the commander's intent, and a thorough knowledge of the capabilities and limitations of the collection systems that broadcast their information to the MI ACT. This function is best performed by the DS MI Company Commander and the S2 Plans Officer. Without assigning this responsibility, the attempt to synchronize intelligence collection systems will be in vain.

DS MI Company should control I-REMBASS. We found that the responsibility for planning a successful I-REMBASS surveillance mission rests squarely on the DS MI company leaders. The company developed a cooperative relationship with the Brigade Reconnaissance Troop, which paid great dividends. Along with learning some new techniques, participating in nested rehearsals, and developing more thorough precombat checks, the I-REMBASS teams became a credible source of intelligence for the 1BCT. During the AWE, we conducted two missions with the Brigade Reconnaissance Troop. We later found out that the I-REMBASS teams were not so survivable with a much more aggressive threat. Because of this, we put the I-REMBASS teams directly under company control so that they were in General Support to the Brigade. We also brought the Team Sergeant into the MI ACT and made him responsible for processing and fusing the information. The I&S Platoon Leader, in conjunction with the S2 Plans Officer, developed an I-REMBASS surveillance plan. This proved to be a good move, and the value of having another sensor that could cue the UAV was well worth it.

Conclusion

In light of the challenges we faced at the NTC, we continue to develop the role of the MI ACT. We are evolving the MI ACT concept further, working on developing a fusion center that will ensure that the data collected from combat sensors (such as the AN/TPQ-36 Firefinder radar, Kiowa Warrior, and Brigade Reconnaissance Troop) are properly fused with information collected by intelligence sensors. We are attempting to apply the lessons we learned to ensure that the organizational structures, roles, and responsibilities, as well as the employment and control of our equipment, that are being written into the standardization and authorization documents are valid and will meet the needs of the maneuver commander and his intelligence team.

Endnotes

1. The MESHNET is a system that was tested during the AWE. It allows the user to monitor a variety of radios and intercoms through a headphone set.
2. SALUTE stands for size, activity, location, unit, time, and equipment. It is the mnemonic for the elements of a properly formatted spot report.
3. The Surrogate Digital Radio was used during the AWE as a substitute for a system that has not yet been fielded.

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***First Lieutenant Merrel** was the I&S Platoon Leader in A Company, 104th MI Battalion. He was previously assigned as a battlefield information control center officer in 3-67 Armored Battalion, 4th ID (M). He has since left military service.*

***Staff Sergeant Woods** is currently the GSR Section Sergeant in B Company, 104th MI Battalion. During the AWE, he was an I-REMBASS Squad Leader in A Company, 104th MI Battalion. You can telephone him at (817) 288-4696 or DSN 737-4696.*

Force Tailoring:

Deploying the G2's Piece of the Assault Command Post

by Lieutenant Colonel Stephen P. Perkins

The nature of the United States' interests around the world, and its coalition-based strategy, will require that US forces be globally deployable, often with little or no warning, from the United States or from forward bases....the Army must have forces prepared to execute either option.

—White Paper, A Strategic Force for the 1990s and Beyond

The Army's ability to project combat power rapidly around the world has been exercised more and more during the last decade. In October 1994, Saddam Hussein moved elements of his Republican Guard into southern Iraq to threaten once again the security of Kuwait and the Kingdom of Saudi Arabia. As elements of the Kuwaiti Army positioned themselves along the frontier, the III (US) Corps readied its contingency force, the 1st Cavalry Division, for rapid deployment via strategic airlift as part of Operation VIGILANT WARRIOR, the American response. Although a task force from the division was already preparing for a combined exercise (*Intrinsic Action*) to be held in December, the corps was performing only minimal battle tracking on the region.

As part of the Corps Assault Command Post (ACP), the G2 operations section was the proponent for intelligence support to the commanding general and the Corps G3. The operations battalion from the MI brigade augmented the Corps G2. Although the G2 had a standard intelligence package for the ACP in place prior to VIGILANT WARRIOR, the personnel in this configuration had never been trained as a group or practiced deployment. However, the G2 ACP section **did** have some experience in functioning as a corps tactical command post (TAC). The TAC is a more robust organization with sufficient representation from the battlefield operating systems (BOSs) to ensure 24-hour operations and expertise.

A close examination by the Corps G2 of the "standard" intelligence package for the ACP resulted in a total reorganization of the intelligence team. The Corps ACP was significantly restricted in size due to a requirement to transport it via only six C-141 aircraft (or the equivalent airframe). As the command and control puzzle for the ACP (Figure 1) came together, it became apparent that a new system would be needed within the Intelligence BOS. As we looked at matching skills to requirements within the "team," it also became apparent that we would need to reevaluate the equipment that we would take and the configuration of the team. In short, we were looking to get the most "bang for the buck." Although we felt it was important to deploy whole teams that had trained together, we knew that we needed personnel with "value-added" potential. There was no room for nice-to-have items or personnel.

The global nature of America's interests, coupled with a force projection doctrine, requires the development of a system of deployable options. For the Intelligence BOS, this means developing and maintaining a number of special teams, including counterintelligence (CI), interrogators of prisoners of war (IPW), linguists, long-range surveillance (LRS), and liaisons. To prepare for future readiness, we must examine how we determined our deployability, how intelligence teams must be developed, and how the senior intelligence officer (SIO) can piece together the intelligence puzzle for success within the overall ACP puzzle. I have divided the ACP Deployable Intelligence Support Element (DISE) puzzle (see Figure 2) into four parts: battle tracking, echelon connectivity, processing and analysis, and human intelligence (HUMINT) and liaison. However, my intention is to focus attention on the flexibility of force tailoring and to highlight the types of HUMINT teams available to the SIO.

Battle Tracking

The ACP is a command post capable of tracking the battle to help the commander and his staff make battle command decisions with adequate situational awareness. On the whole, the ACP is

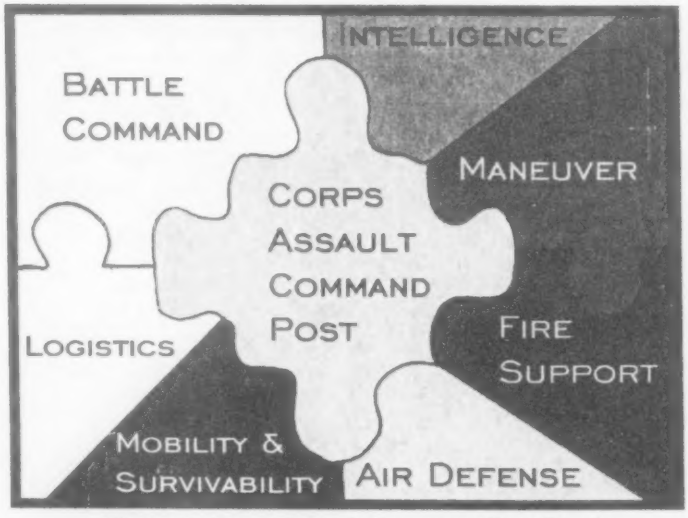

Figure 1. Corps Assault Command Post Puzzle.

still a low-technology operation. Although the Global Command and Control System (GCCS) and the Army Tactical Command and Control System (ATCCS)—including the Maneuver Control System, the Combat Service Support Control System, and the All-Source Analysis System (ASAS)—increasingly automate the ACP, you will still find mapboards with "paste-on" graphics. Forward elements send and receive spot reports on current operations and intelligence. The ACP DISE has operations officers and noncommissioned officers who provide situational awareness and adjust intelligence assets and priorities as directed by the Corps G2.

Echelon Connectivity

Intelligence doctrine suggests that connectivity for intelligence between echelons must be planned and maintained continuously to ensure the commander receives timely information and interfaces daily. While the corps is always focused on its contingency areas, it must also maintain connectivity with its counterparts at echelons above corps (EAC), theater, and echelons corps and below (ECB). To do this, the ACP DISE uses two systems—the TROJAN Special Purpose Integrated Remote Intelligence Terminal (TROJAN SPIRIT) and the Forward Area Support Terminal (FAST), a Tactical Exploitation of National Capabilities Program system. Their applicable gateways and protocols are exchanged and practiced.

Intelligence connectivity is the responsibility of the corps collection manager, who ensures that the architecture includes EAC, theater, and ECB units. The Corps Military Intelligence Support Element (CMISE) is attached to the corps to serve as the link to EAC units. The CMISE is a reinforcing piece of the overall structure. In III Corps, the CMISE works next to the Analysis and Control Element (ACE) and can supplement the DISE's shortfalls. The CMISE also maintains the Sanctuary Command Post (SCP) and provides reinforcement to the deploying ACP. The SCP can also work the issues the ACP DISE is not able to support. For Operation VIGILANT WARRIOR, the ACP DISE would have deployed with a significant number of CMISE soldiers and leaders. Why? They had the experience with Iraqi databases and with intelligence automated systems.

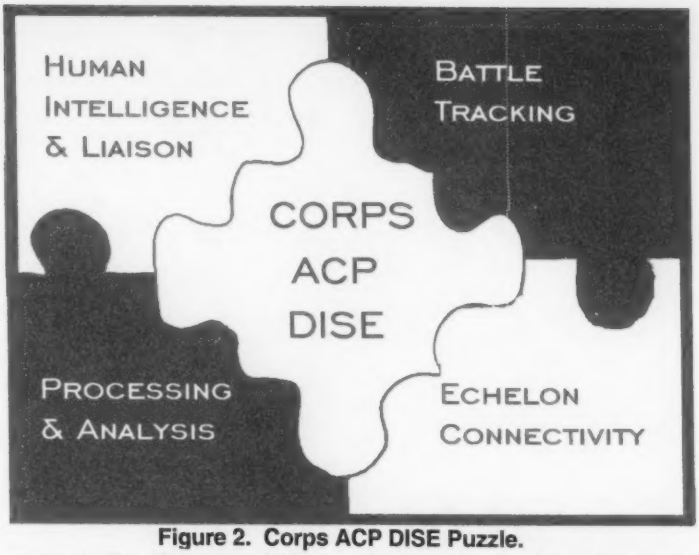

Figure 2. Corps ACP DISE Puzzle.

Processing and Analysis

The III Corps learned early that the key to rapid battle command decisions is the G2's ability to process information quickly and to analyze that data for the commander and his staff. The best system for this task, and the one preferred by III Corps is the ASAS-All Source (ASAS-AS) workstation. Its strength lies in its automation functions—those that the system performs without human intervention (once the analyst sets the appropriate criteria). The major automatic feature of the ASAS-AS is its ability to correlate data, like combining multiple reports on the same entity.

Although the ASAS-AS was the preferred option, it was not deployable due to the strict space and manpower requirements. The ASAS-Warrior (ASAS-W) system proved a better platform for processing and disseminating intelligence. The ASAS-W was originally designed as an analyst's tool for displaying the current situation from incoming messages. Unlike the ASAS-AS, however, the ASAS-W cannot correlate multiple reports. On the other hand, through the TROJAN SPIRIT the ACP DISE was able to receive and transmit digital imagery, templates, graphics, and terrain products with ASAS-W.

Human Intelligence and Liasion

A valuable part of any ACP DISE package is its ability to get HUMINT assets into the theater as early as possible and to receive HUMINT reports from those assets. HUMINT teams can provide—

- ☐ Early warning.
- ☐ Force protection.
- ☐ Linguistic and surveillance capabilities.
- ☐ Local population liaison.

A major concern for the ACP DISE was that HUMINT assets would be misused by the command or have unrealistic limits placed on them. Although it is recommended that a HUMINT capability (CI, IPW, or LRS) bring all of its own equipment, the HUMINT teams might be forced to deploy without some of their bulkier equipment. For example, the high-mobility multipurpose wheeled vehicles (HMMWVs) may be a luxury.

The ACP should remember, however, that the HUMINT teams can carry another means of communications that may not be otherwise available: high-frequency amplitude-modification (HF/AM) radios. These systems can be

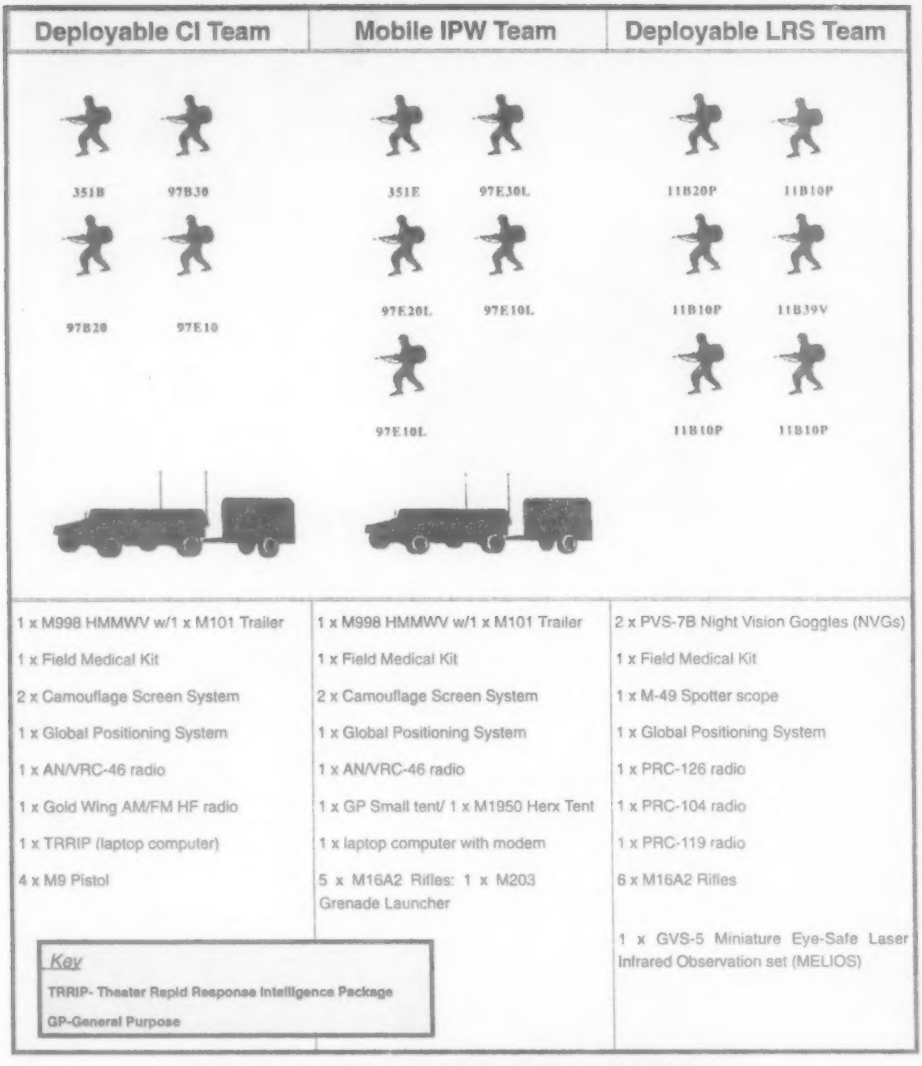

Figure 3. Configuration of the ACP's HUMINT Teams.

used as an alternate or back-up for the primary systems. HUMINT connectivity often relies on HF/AM communications, because it provides a long-range, secure communications capability that can serve multiple clients.

HUMINT teams are fairly mobile and easy to deploy. At the same time, they tend to contribute a significant "value-added" to the efforts of the ACP. For that reason, I have detailed the manpower and equipment requirements that III Corps established for the ACP's CI, IPW, and LRS teams (see Figure 3). Keep in mind that the LRS element will also require a liaison officer team and a base station, neither of which is depicted here.

Conclusion

We have examined the need to piece together the Intelligence BOS puzzle to facilitate deployability and outstanding intelligence support to the maneuver commander and his ACP. While the "standard" package is not obsolete, it has become more of a base piece of the puzzle upon which to build. Our training and readiness posture must fully embrace the principles of tactical tailoring and split-based operations while providing the information and products that the commander and his staff require.

In the end, we should heed the words of General George S. Patton, Jr., "*Practice in peacetime that you would use in war.*" This priniciple should encourage MI units to train regularly to proficiency under realistic conditions. We must be "Ready Now!" to provide effective, integrated, synchronized, non-lethal combat power and good support to the commander and entire warfighting team across the full spectrum of **Joint Vision 2010** missions, operations, and intelligence.

I wish to acknowledge the helpful advice and guidance I received from Colonel Seth Nottingham (deceased).

Lieutenant Colonel Steve Perkins is currently the Combatting Terrorism Support Team Leader in the J2 Office, The Joint Staff. He has been selected for command of the 103d MI Battalion at Fort Stewart, Georgia. His previous positions include Brigade S3 and S2; Battalion executive officer; Chief, G2 Operations, III Corps; Chief, G2 Plans, 101st Airborne Division; and Assistant Professor of Military Science, Southeastern Louisiana University. He has a bachelor of science degree from Cameron University, Oklahoma, and a masters degree in Business Administration from Auburn University at Montgomery. Readers can contact him via E-mail at AFpersp@dia.osis.gov, and telephonically at (703) 695-8095 or DSN 225-8095.

Training for the Balkans at CMTC

by Major Kathleen A. Phillips

Since 1993, the Combat Maneuver Training Center (CMTC) at Hohenfels, Germany, has trained U.S. and Allied units for stability and support operations (SASO). With the declaration of U.S. participation in the North Atlantic Treaty Organization (NATO) mission in the Former Republic of Yugoslavia (FRY)—Operations JOINT ENDEAVOR and JOINT GUARD—the CMTC has focused SASO training specifically on requirements for the Balkan region. The intelligence community in Europe has helped CMTC to develop the proper operational environment and training scenarios. CMTC conducts two types of training on a regular basis: individual replacement training (IRT) and unit mission rehearsals, known as Mountain Eagle exercises.

Individual Replacement Training

IRT began as a commander in chief-directed, theater-specific training program for every individual—every soldier, sailor, airman, marine, and civilian deploying to the FRY. CMTC looked at the implicit hazards in the mission and developed a three-day training program to prepare individuals for the environment into which they will deploy. The terrain and weather at CMTC, located in southern Bavaria, are very much like what they will experience in Bosnia, Hungary, or Croatia. Additionally, all students wear body armor, Kevlar, and load-bearing equipment and carry weapons during training to prepare them for the highest force protection posture they will experience. Finally, the training exposes students to the hazards—environmental and hostile forces—associated with the mission and gives them the fieldcraft and force protection skills necessary to counter those hazards.

Each training cycle begins with a mine detonation to get the students' attention. As they watch the mine catapult a vehicle into the air, they quickly gain an appreciation for the violently destructive capability of mines they may face. The training continues with two days of classroom instruction to introduce the students to the theater, explain the potential hazards, and demonstrate the

U.S. soldiers hold a practice press interview during a Mountain Eagle exercise.

U.S soldier with COB (civilian on the battlefield) at a checkpoint during a Mountain Eagle exercise.

Photos by CPT Dave Jones

skills with as much hands-on training as possible. The classes include the blocks of instruction shown in Figure 1.

IRT Blocks of Instruction

Block	Goal
Country Brief	Orient the students to the region and the current threat.
Media Awareness	Allow students to practice telling the Army story.
Rules of Engagement	Facilitate discussion of General Order Number 1 and the application of ROE.
First Aid	Provide a basic review, especially as in reference to mine strikes.
Driving/Convoy Operations	Review the unique driving hazards in Bosnia and the force protection convoy requirements.
Countermine/Mine Awareness	Review the mine and unexploded ordnance threat, probing techniques, and the mine action drill.
Force Protection Skills	Discuss personnel and vehicle search operations and reaction drills.
Situational Training Exercises	Combine all of the above skills into an evaluated exercise.

The last day of IRT consists of two situational training exercises that allow students to apply their classroom training as they—

- ☐ Deal with reporters.
- ☐ Search vehicles and personnel at a checkpoint.
- ☐ Provide local security.
- ☐ Encounter mines or booby traps.
- ☐ React to snipers, ambushes, or artillery.

The situations students encounter are similar to those that some individuals serving in Bosnia have experienced. Or they are the situations representing worse-case scenarios that the students must be prepared to face.

CMTC has trained more than 26,000 students since the fall of 1995. Individuals do not become experts in SASO or the Balkan region as a result of their training at CMTC. However, IRT students depart CMTC situationally aware of the risks associated with Operation JOINT GUARD and trained to minimize those risks.

Mission Rehearsals

While the focus of IRT is on the individual, Mountain Eagle exercises focus on training units for the operations they will conduct as part of the NATO mission in the FRY. CMTC conducted the first Mountain Eagle mission rehearsal in the summer of 1995 and has conducted four more since, each building on the experiences and lessons learned from units that have served in Bosnia, Croatia, and Hungary.

CMTC replicates the operational environment into which a unit will deploy by defining its area of operations and by providing a similar laydown in the CMTC maneuver box. CMTC has two base camps and five towns in the box to help create a realistic model environment. Additionally, units have transformed sections of Camp Albertshof—where training units typically set up administrative operations during their rotations—into models of the base camps in and around the Tuzla Valley. CMTC creates the interentity boundary line, zone of separation, and mine threat that the unit is likely to experience. Additionally, CMTC's opposing force (OPFOR, 1-4 Infantry) and professional "civilians on the battlefield" (COBs) play the roles of—

- ☐ Officers of the entities' armed forces.
- ☐ Mayors and residents of various towns around U.S. base camps.
- ☐ Representatives of international organizations working in Bosnia.
- ☐ International media.

All of this sets the conditions for a successful rehearsal of a unit's

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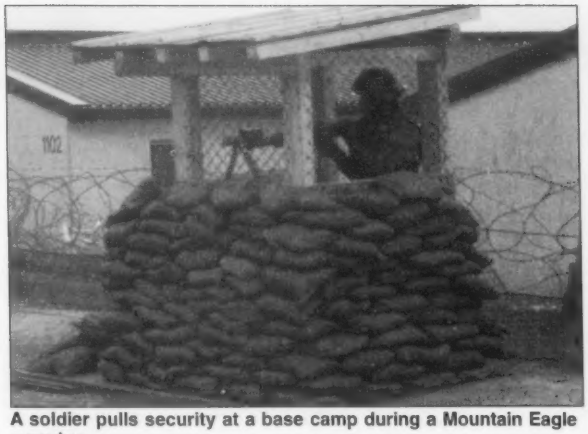

A soldier pulls security at a base camp during a Mountain Eagle exercise.

operational tempo and contingency missions.

The heart of a Mountain Eagle is the rehearsing of the various missions that a unit will conduct, including those that represent worst-case events. Units conduct a transition of authority (TOA) with role players representing the departing unit to gain a full understanding of their sector and the issues involved. The OPFOR and COB help surface local issues as soon as a unit occupies its base camp. The unit then conducts routine peace support operations, such as patrols and inspections of weapons storage sites, to reinforce application of the Rules of Engagement, standard operating procedures, and Task Force Eagle (TFE) policies and procedures. Soldiers practice patience and refine their negotiation and problem-solving skills. Finally, CMTC presents the unit with certain problem sets that force soldiers to rehearse contingency plans and combat skills. These problem sets are drawn from events that have actually happened in Bosnia or from those that TFE leaders believe could happen as a result of resettlement problems, increased ethnic tensions, challenges at a weapons storage site, or detention of an indicted war criminal.

Conclusion

CMTC continues to maintain contact with G2s and S2s who have experience in Operations JOINT ENDEAVOR and JOINT GUARD to stay abreast of the operational environment and threat assessments. CMTC also sends its observer/controllers to visit units in Bosnia and bring back lessons learned, updated assessments, specific TFE products, and recommendations to improve both the individual and the unit training.

Major Phillips is currently a TF S2 O/C at CMTC. In Germany, she has served as an intelligence writer at the Combat Maneuver Training Center and as the S2 for Operations Group, CMTC. She has held a variety of tactical and strategic MI jobs, including the All-Source Production Section officer in charge for the G2, 2d Infantry Division, in Korea; Electronic Warfare Platoon Leader, A Company, 102d MI Battalion, 2d ID; Intelligence Analyst at the Joint Tactical Intelligence Center, Washington, DC; Assistant S3 and, later, S4, 102d MI Battalion; and Commander, B Company, 102d MI Battalion. MAJ Phillips was a Distinguished Military Graduate of the Loyola University-Chicago ROTC program. She holds a Master of Science in Strategic Intelligence from the Defense Intelligence College and a master of arts degree in Security Policy Studies from George Washington University. Readers can contact the author via E-mail at phillipsk@CMTC.7ATC.hohenfels.army.mil and telephonically at 011 09472 83 2301 and DSN 466-2301.

CONCEPTS & DOCTRINE

Digitizing MI Doctrine

by James J. Adams

We hear the terms "digitization," the "paperless" office, "electronic staffing," and "digital libraries" being bantered around more and more lately. What do they all mean and how will they affect us?

Digitization is the process of transferring hardcopy data (books and other documents) into a "softcopy" computer format. It is speeding the access to and availability of doctrine and training publications, while helping to reduce both printing and reproduction requirements and cost. This effort is ongoing throughout the Army. The digitization efforts of the U.S. Army Training Support Center (USATSC) and all Training and Doctrine Command (TRADOC) schools, including the U.S. Army Intelligence Center and Fort Huachuca (USAIC&FH), are discussed in this article. Our purpose is to tell the reader what is available now and where digitization of doctrine and training documentation is heading.

USATSC Digitization Initiatives

The Army Doctrine and Training Digital Library (ADTDL), a TRADOC-sanctioned project, is the official repository of approved Army doctrine, as described in **TRADOC Regulation 350-70, Training Development Management, Processes, and Products**. The ADTDL mission is to provide a worldwide audience with transparent access to a digital repository of accurate and timely training

knowledge sets. It also provides interactive applications to support training for individuals and units.

The ADTDL provides a horizontal base for all training information systems and their associated data. It presents a corporate view of this data in the Windows graphical user interface format over the Internet/Worldwide Web, Defense Switching Network, and ATSC Bulletin Board. The ADTDL advances conventional library functions by providing acquisition, storage, cataloging, retrieval, and dissemination of multimedia doctrinal and training information from both static documents and relational databases.

As an Army-wide system, the ADTDL will curb the development of vertical, user-specific, training information systems. It eliminates the duplication of effort in data entry and maintenance, and their associated data inconsistencies and inaccuracies. Training impacts are minimized through the use of features such as functional orientation, menu-driven actions, and online help.

ADTDL pairs the Training Module (TRAMOD) Executive Management Information System (the TEXMIS) and its key components—Automated Systems Approach to Training (ASAT) and Standard Army Training System (SATS)—with commercial software to tailor collective and individual task information to a user's particular needs. Also included is a "store" of training scenarios for use in development the of tailored mission training plans (MTPs) and training support packages (TSPs) for field and institutional training. Two-hundred seventy-four MTPs and 263 Soldier Training Products (STPs) are currently available as online source materials drawn from ASAT. Drills and officer foundation standards are being added.

The ADTDL obviates the time-consuming and resource-intensive process of distributing doctrinal and training information in printed form. Key among these are field manuals, training circulars, and army correspondence course program materials.

The ADTDL is linked to the Chief of Staff of the Army-approved **Distance Learning Plan** for development of infrastructure and delivery technologies in support of the implementation of the Total Army School System. Use the ADTDL to provide timely data to enhance your operations. You can reach the ADTDL on the Internet at uniform resource locator (URL) **http://www.atsc-army.org/atdls.html**.

USAIC&FH Doctrine Digitization Initiatives

MI Doctrine on the Internet. There are several published MI manuals available from the ADTDL. They contain approved Department of the Army (DA) doctrine and tactics, techniques, and procedures.

Access is available to emerging MI doctrine for review at the USAIC&FH Doctrine and Publications Division Homepage at URL **http://138.27.218.114**. These are drafts and are not to be used as approved doctrine.

Those of you that have attended courses at Fort Huachuca will recall the stacks of student issue course reference material issued from the Training Material Support Branch. We have begun eliminating the issue of hardcopy texts by providing the material on compact disc. We have digitized most of the MI Officer Advanced Course material. We are continuing with the MI Officer Basic Course and other course references until we digitize all course reference material. We realize that rapidly changing material, such as student handouts, does not lend itself to CD-ROM (compact disc-read only memory) media. We will, therefore, continue to issue that via paper or electronic media.

Electronic Staffing of Draft Manuals. We now post our draft manuals on the USAIC&FH Doctrine and Publications Homepage (**http://138.27.218.114**) for speedy access. Electronic staffing will speed the development and availability of MI doctrine by shortening the time between reviewer and writer. Our goal is to eliminate the necessity to mail paper review copies, but we will continue to do so to those organizations that inform us of any problems they have in accessing our doctrine homepage. You can help us by providing your unit E-mail address to ensure the completeness and accuracy of our E-mail mailing list, and by providing feedback on the quality and usability of these online manuals.

Electronic input to manuals under development on our homepage. We have, for several months, posted draft manuals on our Doctrine Homepage. Their availability provides a larger audience with the chance to help focus and develop MI doctrine. The posted items include the Preliminary Draft, Initial or Coordinating Draft, and Final Draft.

Conclusion

As we travel down the digitization road, we ask that you help us stay on course by offering input at any stage of the development cycle. Your critical review and analysis of the documents will help to ensure the highest quality of doctrine for the future force.

James Adams was the Chief, Doctrinal Literature Branch (DLB), Doctrine Publications Division, USAIC&FH. He retired in September 1997 after more than 42 years of federal service, ending with service at the U.S. Army Intelligence Center and School. We thank him for his service and dedication to the MI Corps.

Major Leibovitch is the current Chief of DLB. Readers may contact him via E-mail at leibovitchh @ huachuca-emh1.army.mil and telephonically at (520) 538-0971 and DSN 879-0971.

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CSM Forum

(Continued from page 4)

dealt with within the framework of due process---but never ignored.

A leader's confidentiality is essential for good teamwork. This does not mean he fails to act on information imparted to him, including informing the chain of command when necessary. But he does not discuss soldiers who have problems, personal or professional, with unauthorized people.

There is an erroneous perception by some that there is the requisite "bad cop" in the command. No leader should be getting the job done by imbuing fear or intimidating the soldiers. This method blocks the lines of communication and discourages initiative. When there is a need for a strict disciplinarian, the leader must be willing to fill the bill, but only as a last resort and only as long as needed.

Equal opportunity means affording each soldier the opportunity to go as far as he can within his potential. It also means each soldier will pull his share of the load. Prejudice of any type destroys the potential of personnel and unit success. Leaders must retrain and counsel prejudiced individuals and, if necessary, remove from the service those who continue to display prejudice toward others.

All soldiers are accountable, whether it is accountability for the care and maintenance of their TA-50, personal appearance, conduct, fitness, MOS proficiency, or care of family members, assigned vehicle, or weapon. Failure on a soldier's part to maintain this accountability can result in everything from counseling statements to Uniform Code of Military Justice action. We must take these actions because soldiers should not be required to endure fellow soldiers who willfully fail in their performance of duty. This destroys morale and unit efficiency; failure to enforce accountability will show up when least desired.

Having Fun and Rewarding Excellence

When you are no longer having fun doing your job, it is time to leave and find something else to do that you will enjoy. Your soldiers also need to have a sense of enjoyment in what they are doing. I have seen soldiers who have been in the field for months, smiling and bragging about what they accomplished. They enjoyed their jobs. On the other hand, I have also witnessed a soldier who has never been to the field who complained about how miserable things were and how he could not wait until his time was up and he could get out of the military. He had no job satisfaction. Coming to work should not be a miserable experience; one should end each day with a sense of accomplishment and anticipation for the next day's activities.

Time off with family and friends and the ability to travel and relax are important components to a healthy, positive outlook. Taking leave helps individuals to recharge and approach their duties with renewed vigor. Giving passes as incentives for the extra efforts of your soldiers helps to build morale and set incentives for excelling on the job.

Many spouses work outside the home or have enormous responsibilities for their families. Leaders should encourage spouses to participate in the full array of social events, but there should be no pressure to do so. Structure your social events to fit the needs of the unit and the desires of a majority of its members. Hopefully, the command climate will generate the desire for soldiers to socialize together and to play hard together.

Leaders must be compassionate and courteous. Compassion must not be taken for or developed into a weakness. Compassion involves being courteous to all, especially to your soldiers' dependents. It means taking the time to show your appreciation for a good job, however great or small. It has nothing to do with failing to enforce standards to the point of punishment.

Award soldiers who excel. The Army awards program is an open door, adding one more item to the leader's arsenal of benefits which he can bestow upon the soldier. Use these to reward those who put forth the extra efforts in mission accomplishment. I have seen soldiers work diligently during their entire tours and receive no special recognition or awards. The people who observed their work leave prior to the soldier's departure and the soldier receives a lesser award or no award for his efforts. When leaders depart, they need to ensure they prepare awards for their deserving soldiers, even if this documentation is for continuity purposes and is just passed to the incoming leader.

Also remember: impact awards speak louder than an end-of-tour award when it comes to bettering your unit's morale. Your soldiers will see an individual's accomplishments and the presentation of the award within a short period of time. This shows soldiers that they have leaders who care enough about their soldiers to do the right thing for them.

U.S. soldiers are our most efficient weapon because their leaders have trained them well and encouraged them to use their initiative to accomplish their mission. We have no leaderless soldiers on the battlefield; we have soldiers who are independent weapon systems who will continue their mission as long as they have the means. By the good graces of the military leaders I have had, I am the noncommissioned officer I am today.

ALWAYS OUT FRONT!

Sergeant Major LaFluer is the USAREUR & 7th Army DCSINT Sergeant Major in Heidelberg, Germany. He is currently working on masters degrees in both History and Psychology with the University of Tennessee where he plans to pursue his Ph.D full time upon retirement. Readers can reach him via E-mail at lafluerl@dcsint.hqusareur.army.mil and at German civilian telephone 06221-57-8855 or DSN 370-8855.

PROPONENT NOTES

Enlisted Issues: CINCOS

In June 1996, the Army initiated a "Change in NCO Structure" (CINCOS) to enhance career progression and support for the career management fields (CMFs) and military occupational specialties (MOSs). The Office of the Chief of Military Intelligence (OCMI) conducted an extensive review of the MI enlisted force structure and recommended changes to the Army leadership in support of this action.

Key MI organizations participated in a task force (TF) to assist in this review. The TF included representatives from division-, corps-, and army-level MI units as well as from the Department of the Army (DA) Deputy Chief of Staff for Intelligence, Forces Command, Intelligence and Security Command (INSCOM), and Special Forces and Special Operations Command.

The commanding general's guidance was to change the Army's current system of MOSs and grades to meet our evolving mission requirements and to maintain a healthy MOS career progression pattern. This resulted in noncommissioned officer (NCO) grade reductions in some organizations and upgrades in others. Overall, CINCOS reduces MI NCO grade content from 68 percent to 51 percent. The resulting MI proposal significantly improves our enlisted structure by modifying the number of NCO positions at each grade.

On 2 July 1997, the Chief of Staff of the Army approved all CINCOS proposals (except Infantry's) and accelerated their implementation to 1 October 1998. Consequently, the implementation process has begun. All changes and implementation procedures are in the publication, **Notification of Future Change,** published in July 1997 by U.S. Total Army Personnel Command (PERSCOM). It is impossible to address every MI position affected by CINCOS. However, in this article, I will provide a synopsis of the key changes in each CMF.

CMF 33. CINCOS reduces CMF 33 NCO grade content from 64 percent to 49 percent. Currently, the CMF is overstructured at the staff sergeant (SSG) through the sergeant first class (SFC) grades and is understructured at sergeant (SGT). This imbalance is due primarily to the large number of U.S. Army Training and Doctrine Command instructor authorizations. CINCOS authorizes SGTs to serve as platform instructors in an effort to alleviate this problem. CINCOS also combines MOSs **33R** (Aviation Systems Repairer), **33T** (Tactical Systems Repairer), **33Y** (Strategic Systems Repairer), and **33Z** (Electronic Warfare/Intercept Systems Maintenance Supervisor) into one MOS—**33W** (Electronic Warfare/Intelligence Systems Repairer). This change is due primarily to the declining requirement for component-level repairers. Soldiers currently in CMF 33 will convert to MOS 33W by the end of next summer.

CMF 96. CINCOS reduces CMF 96 NCO grade content from 68 percent to 52 percent. The most positive aspect of CINCOS for CMF 96 is the increase in grade structure in combat organizations.

CINCOS makes the following changes in MOS **96B** (Intelligence Analyst):

- ☐ Armor, Infantry, and Aviation brigade S2 NCOs in charge (NCOIC) positions will be upgraded from SSG to SFC.
- ☐ Battalion S2 positions will be upgraded from SGT to SSG.
- ☐ Analysis and Control Team (ACT) NCOIC positions in the MI Battalion Direct Support Company will be upgraded from SGT to SSG.
- ☐ Analysis and Control Element (ACE) NCOIC positions at division will transfer from MOS **98Z** (Signals Intelligence (SIGINT) Senior Sergeant) to 96B at the grade of master sergeant (MSG).
- ☐ All positions in the all-source production and collection management (CM) sections at division and below will transfer from various other MOSs to MOS 96B.
- ☐ TROJAN SPIRIT (Special Purpose Integrated Remote Intelligence Terminal) responsibility will transfer from MOS **98C** (SIGINT Analyst) to MOS 96B.

CINCOS deleted MOS **97G** (Multidiscipline Counterintelligence (MDCI) Analyst). The erosion of the MOS 97G missions had caused the MOS to be too small to offer a viable career path. MOS 97G functions will transfer to other MOSs. MOS 96B will assume 97G positions in the all-source production section at division and corps. Battlefield deception (BAT-D) authorizations will transfer to the ACE—there is no longer a separate BAT-D mission. MOS **97B** (Counterintelligence Agent) will assume MOS 97G positions in counterintelligence/human intelligence and MDCI sections. All counter-SIGINT positions will transfer to MOS **98K** (Signals Collection/Identification Analyst).

CMF 98. CINCOS reduces CMF 98 NCO grade content from 68 percent to 52 percent. CINCOS also includes signifi-

cant force structure changes in CMF 98.

MOS **98D** (Emitter Locator/Identifier) will merge with MOS **98H** (Communications Interceptor/Locator). All soldiers currently in MOS 98D will convert to MOS 98H. The U.S. Army Intelligence Center and Fort Huachuca (USAIC&FH) will provide transition training for soldiers currently in MOSs 98D and 98H.

MOS 98Z will convert to either MOS 98C, **98G** (Voice Interceptor), **98H** (Communications Locator/Interceptor), **98J** (Electronic Intelligence (ELINT) Interceptor/Analyst), or 98K at the grade of MSG. Soldiers who are currently 98Z MSGs will revert back to their feeder MOSs. DA will continue to promote CMF 98 soldiers to 98Z at the grade of SGM. As we become increasingly technology-based, this will help ensure that soldiers with the right MOSs and skills are placed in the right positions. It also parallels the current CMF 96 career progression pattern.

ASI 1F. CINCOS establishes additional skill identifier (ASI) 1F, All-Source Analysis System (ASAS) Master Analyst. This ASI is authorized for MOS 96B and 98C in grades SSG through MSG. It supports positions in the ACE at division, corps, and echelons above corps. USAIC&FH has established an ASAS Master Analyst Branch (AMAB) within the Directorate of Operations, Training, and Doctrine to manage the program. The AMAB published initial specific details on this program in the July-September 1997 issue of ***MIPB*** (see page 13) and will provide updates on a quarterly basis (page 39 of this issue).

CINCOS will certainly create some turmoil in the MI Force over the next two to three years. However, the improvement in structure and career opportunities will make it well worth the effort.

The points of contact (POCs) for all information pertaining to CINCOS are Sergeant Major Patricia York, OCMI Chief Career Manager NCO, or SFC Taylor. You can contact them at (520) 533-1174, DSN 821-1174, or via E-mail at yorkp@huachuca-emh1.army.mil.

WO Professional Development

The initial publication of **DA Pamphlet 600-11, Warrant Officer Professional Development,** dated 30 December 1996, has been distributed. It discusses warrant officer (WO) history, promotions, education, evaluations, career management, and leader development. The senior WO in each unit or agency should have a copy available to advise the commander on WO issues and to counsel junior WOs. This pamphlet, along with the provisions of the *Warrant Officer Management Act* and the **Warrant Officer Leader Development Action Plan,** forms the backbone of warrant officer utilization and career management. Changes or updates to WO actions may also be found on the WO Career Center (http://leav-www.army.mil/wocc/) and the 326th MI Battalion (http://huachuca-usaic.army.mil/miwarrant/) websites.

The POC for all WO issues is Chief Warrant Officer Five Rex Williams, OCMI WO Professional Development Manager. Readers can reach him at (520) 533-1183, DSN 821-1183, and by E-mail at williamsx@huachuca-emh1.army.mil.

Commissioned Officers' NSDP ASI

The **National Systems Development Program (NSDP)** is a one-year training program that results in the award of an ASI (designation to be determined). Its objective is to educate officers on the capabilities and limitations of national "overhead" systems, collection management, and the leveraging of these technologies in support of decisionmakers at all levels. The introduction of the Army's Tactical Exploitation of National Capabilities (TENCAP) program and the additional emphasis on support to the military from the national intelligence organizations have developed an increased demand for Army officers who understand "overhead" capabilities. To meet this demand, INSCOM created the NSDP. Future assignments for NSDP graduates should be focused on specific positions which require their developed skills.

Currently, PERSCOM (with assistance from INSCOM) is hand-managing the pool of NSDP-trained officers. The OCMI has submitted a package requesting establishment of an ASI to PERSCOM, where it is currently undergoing review. Once the ASI is approved, commanders will be informed of the new ASI, and assignment and tracking procedures for the program will be formalized. The ASI will also enable units to identify specific positions within organizations which require NSDP training so that NSDP graduates will have the opportunity to hone their skills in a valid utilization tour.

A DA board selects officers for the program. Training includes classroom instruction and site orientations. Training is modified for each officer, based on his or her previous education, to meet the requirements of the NSDP. The POC for the program is Captain John Cooper, OCMI. You can reach him via E-mail at cooperj@huachuca-emh1.army.mil and telephonically at (520) 533-5528 and DSN 821-5528.

MI Corps 1997 Hall Of Fame

Major General Charles W. Thomas, Commander, USAIC&FH, hosted the 1997 MI Hall of Fame (HOF) Induction Ceremony on 27 June 1997. The induction ceremony was the highlight of activities that lasted two days

and culminated with the MI Birthday Ball on Friday evening.

Four new HOF members were inducted this year. They are—Sergeant First Class Benjamin T. Hodge (deceased), Master Sergeant Roy H. Matsumoto, SIES-5 James D. Davis, and Major General John F. Stewart, Jr. They were profiled in the April-June 1997 issue of ***MIPB***.

During the ceremonies, the Colonel Carl F. Eifler Sports Plaza was dedicated in honor of a living legend who recruited, organized, trained, and led Office of Strategic Services (OSS) Detachment 101, the "Kachin Raiders," in the China-Burma-India theater during World War II.

The annual gathering of MI professionals was once again a huge success. The Honorary Colonel of the MI Corps, Brigadier General George J. Walker (U.S. Army, Retired), and the Honorary Sergeant Major of the MI Corps, Command Sergeant Major David Klehn (U.S. Army, Retired), also participated in the festivities. The esprit, enlightenment, and entertainment that were part of the HOF activities were enjoyed by all.

The POC for HOF activities is Mr. James Chambers, OCMI. Readers can reach him via E-mail at chambersj@huachucaemh1.army.mil and telephonically at (520) 533-5528 and DSN 821-5528.

MI CORPS HALL OF FAME

Master Sergeant Lorenzo Alvarado (U.S. Army Retired, Deceased)

Military Intelligence Corps Hall of Fame Inductee: 1988

Discipline: CI/HUMINT

Master Sergeant (MSG) Lorenzo Alvarado was born in the Philippines in 1893. Between 1917 and 1928, he served as a Civilian Agent in the U.S. Military Intelligence G2 office, Santiago, Manila. He enlisted in the Regular Army in July 1928. His espionage activities both as a civilian and enlisted agent during World War I stopped destruction of 20 ships by their German owners. His efforts led to the arrest of numerous German agents and pro-German sympathizers, the confiscation of various classified documents, and the uncovering of Japanese activities in securing land in Mindanao. During this period, MSG Alvarado joined various organizations for espionage purposes. His undercover work prevented numerous mutiny, kidnapping, and assassination plans from being carried out against U.S. Government officials.

In January 1942, he became an observer with a Philippine Army regiment that was facing a concentration of Japanese troops while defending Mauban Point. Later, he was assigned to command the leaderless regiment on Bataan. He held his ground for seven days, despite being cut off from food and supplies by the Japanese forces, and safely withdrew his surviving command back to U.S. lines. MSG Alvarado participated in the defense of Bataan until its surrender in April 1942.

MSG Alvarado was interred in a concentration camp after the surrender of Bataan. His final instructions had been to continue his intelligence work during the enemy occupations. After his release from the camp, he returned home to a destitute "starvation life" until the liberation. During this time, his intelligence work and espionage greatly endangered both him and his family. Upon arrival of the liberation troops, Alvarado immediately contacted intelligence officers of the advanced detachment and furnished them with maps which showed the location of enemy positions and provided them with a list of pro-Japanese collaborators. All of this was a result of his espionage activities, which included disguising himself as a street vendor during the Japanese regime.

U.S. Army Photo

At the end of World War II, MSG Alvarado received the Legion of Merit for his exceptionally meritorious conduct in Bataan. He became a naturalized U.S. citizen in August 1946 in Manila. He retired from active duty on 30 June 1958 and died in February 1974.

RESERVE COMPONENT

National Guard AGR Attendance of RC MI Courses

Army Guard and Reserve (AGR) soldiers reporting without proper documentation to the United States Army Reserve (USAR) MI Total Army School System (TASS) Battalions for MI training will be turned away. A number of National Guard AGR soldiers have arrived to attend MI courses either at the U.S. Army Intelligence Center and Fort Huachuca (USAIC&FH) or at MI TASS Battalion training sites without the documents necessary for enrollment. Those soldiers with waivers from the National Guard Bureau (NGB) may be allowed to attend on a case-by-case basis. All others will be returned to their units.

This clarification is in response to a situation where an AGR individual was sent to a Reserve Component (RC) MI Course without proper documentation. The USAR has a similar requirement for USAR AGR personnel.

AGR personnel in MI positions must attend the resident training for branch qualification in MI. It is the position of the MI Proponent that the AGR in an MI unit is a key trainer of MI soldiers and must be trained in residence to provide for the best possible training for the "M-day" soldiers in the unit.

Warrant Officer Acquisition

We continue to have shortages in some of our RC MI warrant officer military occupational specialties (MOSs). The basic requirements for each MOS are specified in **DA Circular 601-94-1, Warrant Officer Procurement Program**. We qualify each packet on its own merits but there are some prerequisite qualifications for which we will not permit waivers:

- ☐ You must possess the proper feeder MOS obtained through an approved school. It does not matter whether it was an RC or Active Component (AC) school. If it was RC, all phases must have been successfully completed.
- ☐ You must be at least an E-5, preferably with two or more noncommissioned officer efficiency reports (NCOERs) showing that you have performed in the proper MOS. Rating periods which are not covered in NCOERs will often cause a packet to be returned.
- ☐ You must have a current Top Secret clearance with sensitive compartmented information (SCI) access based on a special background investigation (SBI) or single-scope background investigation (SSBI). If it has expired and no periodic reinvestigation has been submitted, your application will be returned. The only exception is MOS 351E, which requires only a Secret clearance.
- ☐ If you are applying for a language-required MOS, you must enclose a current Defense Language Proficiency Test that is not more than twelve months old and that verifies a 2/2 level of proficiency.
- ☐ Requests for waiver of any other prerequisite will be considered on a case-by-case basis.

Applications from commissioned officers to convert to warrant officer rank must detail the applicant's experience in the MOS for which he or she is applying. General experience in intelligence operations is not normally sufficient for successful review of an application. Additional training may be required to meet all of the necessary qualifications. Other questions on the application procedure for officers can be directed to the National Guard Bureau (NGB) or to the Army Reserve Personnel Center.

All applications must be processed through the NGB prior to forwarding to the Proponent for eligibility determination. Questions on specific qualifications may be directed to Chief Warrant Officer Five Rex Williams via E-mail at williamsx@huachuca-emh1.army.mil and telephonically at (520) 533-1183 and DSN 821-1183.

E-Mail SITREPs

The National Guard Advisor, USAIC&FH, publishes an informal situation report (SITREP) approximately every two weeks via E-mail for Guard, Reserve or AC MI individuals with interest in RC news. He also retransmits items that he feels are of value to the RC MI community. If you would like to receive this SITREP, please send Major Ponder an E-mail at ponders@huachuca-emh1.army.mil. The SITREP is not available via conventional mail or fax.

Colonel John Craig is the USAR point of contact (POC) and the Chief of the Reserve Forces Office. Readers can contact him at (520) 533-1176, DSN 821-1176, and via E-mail at craigj@huachuca-emh1.army.mil. Major Steve Ponder is the ARNG POC; his telephone number is (520) 533-1177 or is DSN 821-1177 and his E-mail addresses are ponders@huachuca-emh1.army.mil and ponders@aol.com. Their fax number is DSN 821-1762 and their mailing address is Commander, USAIC&FH, ATTN: ATZS-RA, Fort Huachuca, AZ 85613-6000.

PROFESSIONAL READER

The Uses and Limits of Intelligence by Walter Laqueur (New Brunswick, NJ: Transaction Publishers, reprinted in 1993 with a new introduction by the author), 445 pages, $24.95 paperback.

Originally published in 1985, **The Limits and Uses of Intelligence** by Walter Laqueur is a good review of intelligence support to decisionmakers. The newest edition contains a 1993 introduction that attempts to add relevancy to an evaluation of intelligence more than ten years old. Laqueur's premise is that intelligence is only as good as those who produce it and only meaningful if used by the decisionmakers it is designed to support.

Mr. Laqueur believes there have been few honest attempts to evaluate the intelligence community's contributions to decisionmakers. This book is an attempt to analyze all intelligence disciplines and evaluate their value added to the decisionmaker. As a result, he has written a good analysis of intelligence successes and failures from an academic and strategic intelligence perspective. If you are a political scientist at heart you will love this book. If not, you may struggle a bit. With a little imagination, however, you will glean a few key concepts that will make the book worth reading.

The book offers intelligence professionals the opportunity to look at intelligence from an academic perspective. The author states that *"neither science alone nor human analysis alone is enough to solve the problem."* It requires a combination of the two—analysts and science must work together to achieve the appropriate solution. The author also says *"if intelligence is a craft, it is not one that is easy to master."* The quality of analysts will remain the decisive factor in future intelligence as it has in the past.

Once the information is developed, though, it is only as good as the decisionmakers who use it. Intelligence seldom gets credit for its successes, but it is quickly criticized for its failures. In Chapter 3, the author asserts—

> *Even excellent intelligence is of little consequence unless its most senior consumers, the president and secretaries of state and defense, take cognizance of it and believe its accuracy.*

Unfortunately, the book misses some of today's critical intelligence concerns. Written in 1985, the book's then-earth shaking revelations about the failures of intelligence are old news in 1997. However, Laqueur does provide a glimpse into past mistakes that should serve well as education for intelligence professionals. For example, in Chapter 9 the author describes what he believes to be the root causes of intelligence failures: surprise, mirror imaging, questions of rationality, cultural bias, ignorance, deception, and conservatism. He describes each of these causes in detail and provides historical anecdotes that support each supposition.

Despite his admirable effort, there is very little in Laqueur's work that offers a great deal of insight for today's intelligence circle, other than the causes of intelligence failures cited in Chapter 9.

Captain Mark E. Stanley
Fort Huachuca, Arizona

Space Power Interests by Peter Hayes, Editor (Boulder, CO: Westview Press, Inc., 1996), 237, $59.00.

Space Power Interests is a must-read book for those who deal with the non-proliferation treaty, or future policy with stakes in space power. Peter Hayes, who directs the Nautilus Institute's Security Program, edits a number of well-written and concise essays which sum up what is at stake in the "space race" aspect of missile proliferation. The Nautilus Institute is a policy-oriented organization with a focus on Asian states. They also focus on "international cooperation for security and ecologically sustainable development." Because of the Institute's academic and analytical bent, little ideology infects these essays.

The book first establishes the current state of space power. Then, regional and technical experts analyze specific states' special interests. The essays then turn to describing the proliferation, testing, monitoring, and verification of Intercontinental Ballistic Missiles (ICBMs). Finally, the essays cover some possible opportunities for cooperation between those with stakes in either proliferating or preventing proliferation.

Having several (or even one) "rogue" states with an ICBM is an obvious threat to any nation's security. Any Space Launch Vehicle which can launch a commercial or research satellite can also be turned into an ICBM with a few minor modifications. SCUD missile attacks during the Gulf War showed us how difficult it is to defend against incoming missiles.

This book asks whether we can avoid proliferation of long-range missiles in the years to come. The response is: **maybe**. Developing a defense against such attacks would require many years of research and enormous amounts of money. Nuclear arms negotiators also worry that such a system could prove to be destabilizing by removing or altering the concept of Mutual Assured Destruction. All of these worst-case scenarios presume one thing: that we cannot prevent proliferation.

The first five essays try to ascertain why the existing space and missile powers (the United States, Russia, China, and Europe) even care about non-proliferation. They do that by presenting the technological barriers to space travel; motives for entering the space race an assessment of where various states are in their quest to develop an independent space launch capability; prospects for future cooperation; and possible regime structure.

The second half of the book looks at regimes in related fields which may serve as precedents for future regimes. It also examines the chances of a universal ICBM non-proliferation regime. These essays point to a conclusion that universal and regional approaches are not only possible but are needed right now. Furthermore, they call for the United States and Russia to reduce their long-range missile forces and to accept a missile test ban treaty.

Again, I recommend this book for anyone who is interested in non-proliferation and nuclear treaties. However, it probably should be on your "B" reading list.

Captain Roger F. Cavazos
Fort Benning, Georgia

Strike Swiftly—The 70th Tank Battalion, From North Africa To Normandy To Germany by Marvin Jensen (Novato, CA: Presidio Press, 1997), 368 pages, $24.95.

Strike Swiftly tells the story of the 70th Tank Battalion, an independent armored unit, as it progresses through World War II. It cannot be called a true history of the unit, for it relies on the memories of former unit members to trace its path through the campaigns of North Africa and Sicily, and then from D-Day until the end of the war in Europe.

The author admits that he did not participate in most of what is described throughout the book, and, as we all know, memories are colored by time. The story is somewhat disjointed in that there is not a steady flow of the story line. The author switches time periods and locations seemingly at will and does not allow the reader to follow along with the progression of the unit's activities.

At times, the recollections of the former tankers contribute nothing to the true history of the times. It almost seems that the intent of the author was not to publish an historical document but to provide those survivors of this WW II era with a trip down "Memory Lane." The identity of each contributor to the text is clearly listed, as it should be, and this will make it a big seller among the 70th Tank Battalion's soldiers and their families who want to keep it as memorabilia of those times.

William F. Ivory
Fort Huachuca, Arizona

*U.S. Government Printing Office: 1997 - 681-043/64501

902d MI Group

The 902d Military Intelligence Group crest consists of three gold sun rays behind an oriental blue disc surmounted by a gold chess piece and a red and gold chess board. A golden scroll inscribed with the unit motto surrounds the chess piece. The sun rays allude to the unit's World War II service in the Philippines and New Guinea. Red is used to symbolize courage, zeal, and awareness, with the alternating gold squares referring to the unit's counterintelligence mission. Oriental blue is symbolic of coolness and courage. The Knight, a chess piece shaped like a horse's head, symbolizes the 902d MI Group's ability to make strategic moves while checking any hostile infiltration and advancement.. The attentive ear alludes to the unit's motto: "Strength Through Vigilance."

The 902d MI Group has a long and proud heritage in the U.S. Army. "The Deuce" was constituted as the 902d Counter Intelligence Corps (CIC) Detachment on 14 October 1944, and activated on 23 November at Hollandia, New Guinea. At the time, this location served as the forward headquarters for General Douglas MacArthur's Southwest Pacific Area. The six-man detachment was involved with force protection, document collection and exploitation, and the arrest and interrogation of enemy agents and collaborators. The unit was awarded New Guinea and Luzon Campaign participation credits and the Philippine Presidential Unit Citation Streamer.

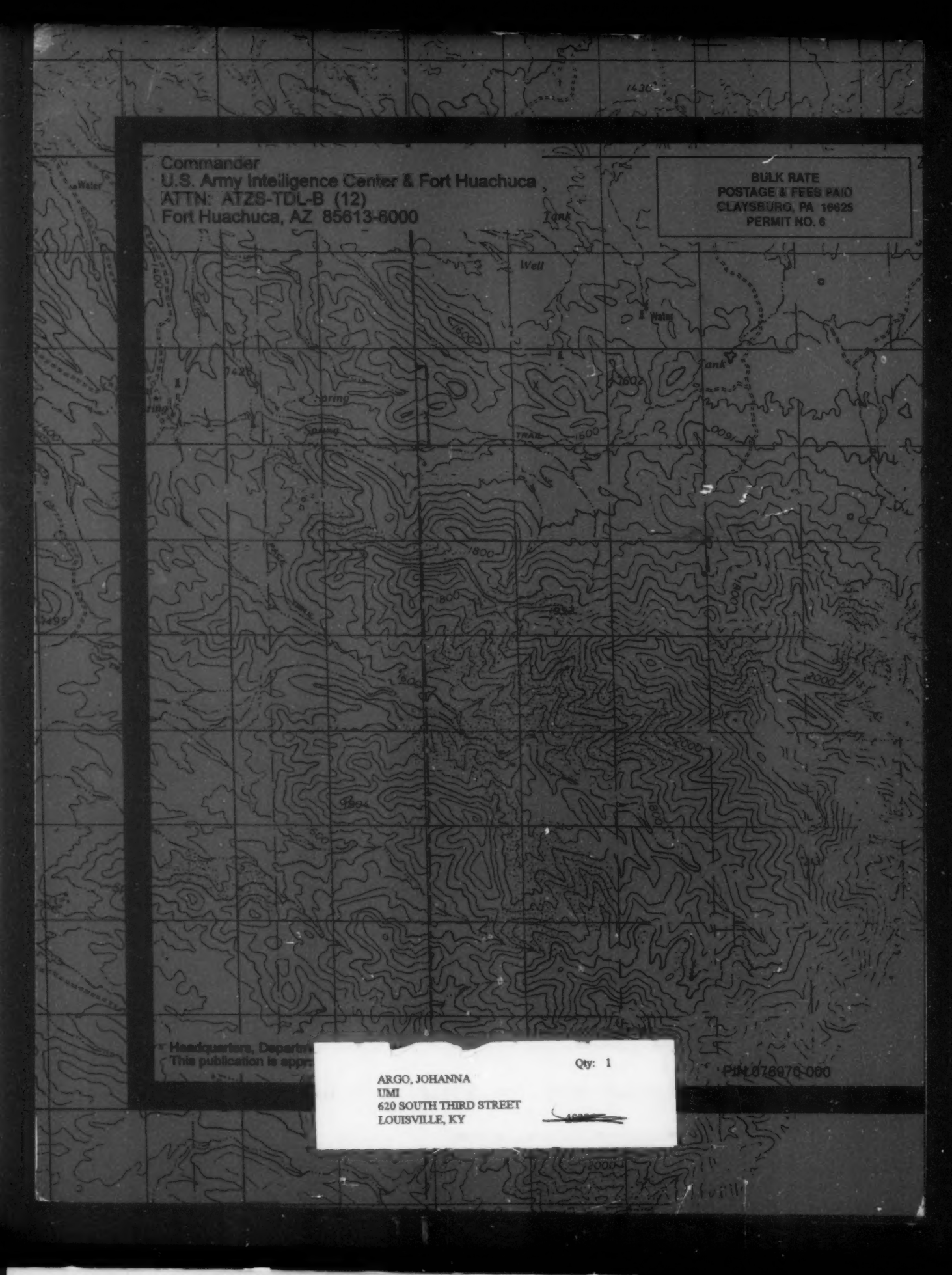
Shortly after the end of World War II, the 902d CIC was inactivated and reactivated in the Organized Reserves at Fort Smith, Arkansas. Throughout its existence as a Reserve unit, until its inactivation on 2 November 1949, the 902d had four officers and four warrant officers whose mission was to provide counterintelligence support to the tactical elements of Fourth Army.

The 902d CIC Detachment reactivated in the Regular Army on 8 January 1952, at Fort Holabird, Maryland. The unit was created to give the Department of the Army's Assistant Chief of Staff for Intelligence an organization that could handle the most sensitive cases worldwide and augment local CIC resources where needed. Additionally, the detachment took over the mission of providing counterintelligence (CI) support to the Pentagon.

After many name changes, "The Deuce" was finally redesignated as the 902d MI Group on 15 October 1966. The 902d relocated to Fort George G. Meade, Maryland, on 1 July 1974, when it was assigned to the newly established U.S. Army Intelligence Agency.

On 1 January 1977, the Army's signal security, operations security support, and counterintelligence missions in the Continental United States, Alaska, and Puerto Rico were delegated to a single CI group----the 902d----which was reassigned to the newly created U.S. Army Intelligence and Security Command. Over the years, the 902d's mission has evolved into protecting U.S. forces, secrets, and technologies from the foreign intelligence threat.

"The Deuce" is the only CI unit that does everything---security, investigations, operations, analysis, technical security and, more recently, information warfare. However, the 902d is more than just a CI unit. It also contains many unique organizations that are found only in "The Deuce." In October 1993, the 902d absorbed the Special Security Group, making the unit capable of providing support to the Special Security Offices under contract with the Army. The Central Security Facility, which became part of the 902d in1993, is the foremost intelligence archive in the Army today. The Army Counterintelligence Center is the only national-level counterintelligence analysis unit in the Army. Most recently, the 902d has assumed a counterespionage mission as well, making it the largest and most comprehensive counterintelligence unit in the Department of Defense. With its varied missions and assets, "The Deuce" looks forward to the 21st Century Army and another 50 years.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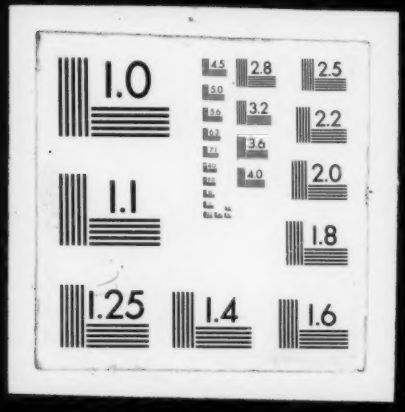
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